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FOCUS OF MOTIVATION IN SPORT: A PRINCIPLE FACTOR

by

(C)   GORDON TAYLOR GARVIE

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TO Dr. J.H. Widdop, architect of a most practical
and successful school of physical education, LAKE-
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and

Tommy Campbell,who knew kids and loved kids and allowed them to grow.
Clarence Garvie,who taught of the real opponent.....oneself.
Neil Sherlock,who respected, encouraged and had compassion with youth.
Al Leddingham,who taught that a challenge should be met with control.
Ches Anderson,who was tolerant and understanding in a medium of demand.
Bill Smith,who knew what efforts must be expended towards excellence.

ABSTRACT

A total of 108 high school students were studied, all of whom were active participants in varsity level athletics. Each subject completed a psychological test battery made up of nine questionnaires including twenty-two scales. These scales included, amongst others, basic needs, locus of control, self-esteem, personal orientation and sport incentive motivation. Simultaneously, the individual coaches completed a behavioral assessment based on the athlete's general sport behavior.

A factor analytic solution was derived based on twenty of the included scales. Five factors resulted which were interpreted as focus of motivation in sport. These five factors were labelled; Affiliation, Principle, Self versus Task, Provincial and Respect versus Security. The hypothesized factor called Principle contained the ingredients self-actualization needs, internal locus of control, high self-esteem, intrinsic motivation, attributions to achieve and low aggression incentive.

Interviews were then conducted with the upper extreme subjects in each of the five factors and the results were found to support the questionnaire data. Affiliation subjects were in sport primarily for friendships and to be a part of the team. Principle factor subjects at the upper extreme, were focused on excellence, on trying hard, and attempting to accomplish some worthwhile goal.

At the self-oriented extreme of the Self-Task factor and the upper extreme of the Provincial factor, the individuals were of a somewhat similar nature. The self-centered athletes reported a major focus of motivation on winning and recognition while the high provincial

subjects scored high on aggression, power-seeking, and success and recognition incentives. The fifth factor, Respect versus Security was characterized by extreme subjects who were very concerned about respect and recognition. This last factor loaded on respect needs and relationship needs at one end of the continuum with security needs and low self-esteem at the other.

These five psychological factors were then correlated with the behavioral assessments made by the coaches. Significant and positive correlations resulted between the Principle factor and both a sport competence score and a combined positive behavior score.

Due to the prime importance of this factor called Principle, two groups were selected who were at opposite extremes of this major construct. Data from Subjects who were high (n=21) and data from subjects who were low (n=21) were grouped and within group correlational analysis was completed.

The following results support the nature of the Principle factor with regards to sport performance;

(a) The low Principle factor (LPF) group had a number of significant correlations with behavior. As Provincial and Self versus Task factor scores increased for the LPF group, ratings from the coaches on self-direction, sport competence, and positive sport behavior in total were found to decrease. This was not the case for the high Principle factor (HPF) group.

(b) As Respect versus Security scores increased for the HPF group, so did the coaches' assessments of positive sport behavior and sport competence.

These findings were discussed relative to the concept of 'focus of motivation' which implies a dynamic-holistic model. While this model makes considerable use of the intrinsic-extrinsic motivation continuum, efforts were made to re-organize several ideas on motive which may be pertinent to the practical sports setting.

However, of particular interest was the further understanding gained as to the nature of the intrinsic motivation construct. As defined within the present investigation, sport intrinsic motivation correlated with six of seven sport incentive motivation scales. Positive relationships were with excellence and stress while negative relationships were with power, success, aggression and affiliation. Intrinsic motivation also correlated positively with sport attributions to achieve as well as non-specific self-actualization needs and task orientation.

PREFACE

Involvement in sport is an important part of the lives of many people today whether they be highly trained athletes, children in the park or seniors on the green. Those who are active may be in a variety of capacities such as athletic participants, referees, administrators, newswriters, parents, trainers, coaches, researchers, spectators and more. It is no surprise then, that there is both an interest and a need to further understand the various motives for involvement.

The following pages take a close look at the concept of motivation from both theoretical and practical points of view. The first two chapters deal with the psychology of motivation, however from slightly different perspectives. Chapter I includes both theory and philosophy while Chapter II is concerned more with empirical research and is entitled the 'Motivation of Psychology'. Emphasized in this second chapter is the great number of studies which have been conducted relative to motivational theory.

Chapters III and IV bring the discussion to a focal point and describe the reasons for the present study. The rationale and hypotheses are presented followed by the methods used to find answers to some pertinent questions.

Chapter V presents the results on a variety of statistical analyses. The content includes measurement instrument analysis, relationships between a number of mental constructs, interviews with twenty-eight selected high school athletes, and examination of behavior assessments made by their coaches. The discussion of these results with subsequent

conclusions and implications is presented in Chapter VI.

Today there is some concern about the gender of literary discussion. Rather than fill the context with his/her or he/she statements, reference is maintained in the male gender partially because the subject sample was male. Other reasons include convenience and the author's belief that the interested reader will be most concerned about theoretical content.

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CHAPTER I

INTRODUCTION TO THE PSYCHOLOGY OF MOTIVATION

When we view a situation from our own standpoint, our impression is not always the same as that of another person. In fact there is a strong possibility of misinterpreting behavior if we examine it from only our own point of view. Hamachek (1971) relates the following story:

> The parents of a small boy were worried. He was quiet, sensitive, lonely, and acted afraid of other children. The parents wanted some professional advice before the child entered school and so invited a psychologist friend of theirs to the house for an afternoon and dinner so he could observe the boy under more natural conditions. Upon arriving, the psychologist asked all the appropriate questions about history and behavior and then took a spot on the balcony where he watched, unseen, the boy play in a garden by himself. The boy sat pensively in the sun, listening to the neighborhood children shout. He frowned, rolled over on his stomach, kicked the toes of his white shoes in the grass, sat up and looked at the stains. Then he saw an earthworm. He stretched it out on a flat stone, found a sharp edged chip, and proceeded to saw the worm in half. Many impressions were taking shape in the psychologist's mind, and he made some tentative notes to the effect; 'Seems isolated and angry, perhaps over-aggressive, or sadistic, should be watched carefully when playing with other children, not have knives or pets.' Then he heard the boy talking to himself. He leaned forward and strained to catch the words. The boy finished his separation of the worm, his frown disappeared, and he said, 'There, Now you have a friend' (pg. 49-50).

This example points out that behavior itself does not necessarily tell the observer very much at all about an individual. Further, surface motives, such as those of sadism or aggression in the above example, are only expressions used to label behavior but which may mislead understanding of the more general motivations or needs of the individual.

Far more basic to the understanding of individual behavior however, is an understanding of how the person views himself since basic needs could possibly be a product of one's self-concept, the particular

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ideas and attitudes a person has about himself. For example, consider a person who has incorporated a self-concept such as, "I am only an insignificant member of one animal species who is isolated from others and, I have limited ability." This individual who has accepted an attitude of personal insignificance will most likely be driven by physical and security needs and perhaps relationship needs should such relationships with other people be comforting and/or add to the chances of physical needs being met.

On the other hand, if a person has formulated an attitude towards the self as competent and on an equal plane but not superior to others, basic needs will most likely be different. From this self-concept will be an individual who would probably be driven by higher level needs or growth needs as described by Abraham Maslow's (1954) need hierarchy which advances from physical, safety, love and esteem needs to self-actualization needs.

But, there is an even more basic element involved in understanding human behavior which is referred to as researcher self-concept. It would not merely seem a recommendation, but an imperative that in order to clearly describe the motives for behavior, as psychologists are compelled to do, an accurate concept of man and self be prerequisite. Because perception is an individual process, the view that we have of ourselves is basic to the formulations we make about our environment. These foundation stones are then the basis of our expressed basic needs, more immediate motivations and of behavior itself. For example, the direction of psychological research is likely to vary considerably as initiated by someone who believes he is an isolated physical organism as compared to someone who believes he is inter-

connected with all mankind and with all forms of life. In the first case the isolated sense of self would automatically place emphasis on the physical nature of man, his physiology and subsequent behavior. In the second case, allowance is made for a non-material, or spiritual man which places attention on beliefs, cognitions, perceptions and subsequent behavior.

It is from this reasoning that an emphasis is placed on the researcher since even though experimental vigor protects against bias, self-concept cannot help but play a role in determining the nature of the experiment itself. Without question, the nature of work presented by Sigmund Freud (1915), Abraham Maslow (1954), and B.F. Skinner (1971) differs, as does their separate beliefs as to the nature of a human being. Freud considered humans as basically evil with instincts which must be suppressed. Maslow however described man as basically good. Skinner's view of the human is that of an organism whose behavior changes according to the perceived consequences of behavior, the reinforcement contingencies.

This rather disturbing point creates suspicion of the very direction of psychological research in much the same fashion as all history is suspect, since recording fact necessarily means interpretation of observations which involves individual perceptions. So, it would seem that values and beliefs play a crucial role in the nature of research as well as interpretation of findings. This issue is of no small consequence and suggests very strongly that the study of motivation means the study of the nature of incentives, more basic needs and central beliefs as well as the stance from which the particular writer proceeds. Therefore, the view of man which the present author would accapt is reflected in the following introductory sections.

A. Synergy - Interaction

There would seem to be a series of clearly defined and imperatively linked components which make up the process of man as we know it. First, and a major prerequisite, there must be consciousness, for without, the human would not be aware, would not be cognizant of the environment within which he appears to live, move and have his being. There are opposing views as to the source of this consciousness as some authors imply that the central nervous system generates itself (Pribram, 1971; Eccles, 1973; Schwartz, 1973). Others in neurology have recently indicated that the brain may be inadequate in accounting for consciousness and by so doing imply something more universal (Sperry, 1969; Penfield, 1975). It is not, however, the purpose of the present thesis to deal directly with this argument. It will be accepted for now, that without conscious awareness, mankind would have little opportunity to study the causes of behavior within this earthly medium.

The second component essential to man's behavior is that of stimuli. Generally, we view stimuli as the producers of afferent impulses coming into the central processor of the nervous system for possible interpretation. It is then the afferent system which is closely connected to motion and this motion is seen as behavior. Stimuli may be environmental phenomena such as temperature, noise and color, or they may be internal but not central nervous system events such as hunger and thirst. This view is complicated by theory which posits that humans seek out stimulation which suggests something more than an organism which processes incoming information through the five 'physical senses'. For the purpose of the present paper, however, it is merely pointed out that first there must be consciousness and there

must be a stimulus as prerequisite to behavior. This does not imply that a response will be made to every stimulus, indeed that would be impossible. Stimuli do not cause behavior but stimuli are involved in behavior as the organism proceeds on a course of action.

This brings the discussion to the third component which is the point of a great deal of research today. This is the component which involves sensation, focus of attention and perception and is the active stage of sensing and perceiving the meaning of a stimulus which suggests a central processor or soul, which the Greeks thought to reside in the brain's fourth ventricle. In fact, it was Galen's 'cell doctrine' which outlined three cells, one where common sense was located and where images were formed (the lateral ventricles), the second cell was attributed to reasoning and judgment (the third ventricle) and the third cell was localized for memory and motivation (the fourth ventricle). It is interesting to note that the soul was therefore housed within the chamber of motivation.

It was not until the 17th century that suggestion was made that the Greek theory was misleading. But the advancement cannot be lauded since Rene Descartes' contribution was to re-house the soul within the tiny pineal gland located at the posterior of the corpus callosum which is the major connecting structure between the brain's two hemispheres. And yet both Galen and Descartes may be partially correct in that the soul or as Wilder Penfield (1975) calls it, the mind, is prerequisite for life and in that sense is life. Such reasoning sheds new light on the work of neurologist Karl Lashley (1950) who concluded after a lifetime of study in search of the engram, that it appeared learning was just not possible. Perhaps he had simply provided evidence that intelligence and life do not reside in matter.

However, the major issue here is that of perceptual inter-
pretation of events. The central processor, mind or man, is somehow
able to generate meaning from various stimuli as for example the mean-
ings contained within spoken language. When someone speaks it is poss-
ible to understand each separate word but, the separate words do not
carry the message which is held within a sentence or a short speech.
The statement 'and a mist went up' can be taken literally, that a fog
or cloud appeared or, it can be taken with the deeper meaning that
something was obscured, that the actual truth of something is not eas-
ily seen. It is the meaning that people give to stimuli which is the
key issue in psychology, and the meaning must be very closely linked
to personal values and past learning since these variables will un-
doubtedly affect that of which we are aware in a world of stimuli.

A further point with regard to the information processing
function of this five component model of behavioral action, has to do
with balance or equilibrium. That is, there is an increasing amount
of literature which suggests that the human being seeks activity within
a personally laid-out range which attempts to avoid excessive boredom
or excessive anxiety. Both extremes can produce a stressful condition
and this state of being is uncomfortable. This balance is reflected
in the statement,

> The organism tends to acquire those reactions which,
> when over-all stimulation is low, are accompanied by an in-
> creasing stimulation; and when over-all stimulation is high,
> those which are accompanied by decreasing stimulation (Leuba,
> 1955, pg. 29).

Through the study of rats, it has been shown that more time
will be spent exploring a novel stimulus than stimuli which have been
previously explored and, less time will be spent exploring stimuli the
second time (Berlyne, 1950). Rather than tension reduction, this find-

ing points at the fact that organisms seek out stimulation and indeed this was the exact proposal made within the theory of 'optimal stimulation'. Leuba (1955) pointed out that tension reduction is not the only principle of learning since an organism tends to acquire those reactions which, when over-all stimulation is low, are accompanied by increasing stimulation and when over-all stimulation is high, those which are accompanied by decreasing stimulation. The key factor is overall stimulation rather than the intensity of any one stimulus.

The theory of cognitive dissonance (Festinger, 1957) also suggests a balance. The basic concept of dissonance theory is that simultaneously believing two ideas (opinions) that are psychologically inconsistent, arouses dissonance. Because dissonance is unpleasant, we try to reduce it by removing the inconsistency. To achieve consistency, or 'consonance', we may change one of our beliefs to make it consistent with the other. For example, a small child was washing the dishes at the same time an interesting show appeared on television. The situation she found herself in created dissonance because she was doing something (the dishes) which she disliked doing at that time. After a few minor complaints she was heard to say, "Well, it doesn't matter really because that show isn't one of my favorites". What she did, in this situation, was reduce the dissonant condition which was uncomfortable by changing a belief, 'I want to see the TV show' to make it consonant with the fact that the dishes had to be done.

Equity theory (Adams, 1963) is yet another balance proposition. Basically, the presence of inequity in a person creates tension, and the tension is proportionate to the magnitude of the perceived inequity present. This tension, which the person creates himself, will drive him to reduce it in similar fashion to dissonance reduction.

Flow theory (Csikszentmihalyi, 1975) is a final example of what may be called balanced psychological functioning. Flow is an area which is bounded by boredom and anxiety on one side while worry and anxiety are on the other. Optimal psychological balance in daily life falls between these two extremes and this hints very strongly that the external stimulus is not the major factor in behavior analysis, nor is the overt response. The main component of behavior must lie within information processing which is handled by the human mind as influenced by past learning, and subsequently through awareness and perception.

As we can see, the third component is the key to behavior following prerequisites, consciousness and stimuli. The fourth component is actual behavior which is the action or movement which can be observed and is the point at which behavior modification programs are based. The contingencies which surround behavior, the antecedents and the consequences, are of prime importance in operant conditioning. Because the intervening component, preferably called mind function, cannot be visually observed, operant conditioning programs have been geared at other than central processing factors (Watson, 1925; Skinner, 1953).

The fifth and final component of this psychological model is that called retrospection. That is, behavioral consequences are reviewed in thought and this process is not separate from the central processor which, housing beliefs, therefore influences perception, which influences meaning and in fact influences total awareness.

In sum then, the five proposed components of psychologically balanced functioning are, (a) consciousness, (b) stimuli, (c) a central processor which is permeated by past learning and values which in turn influences awareness and perception, (d) behavioral action, and (e)

retrospection. It is easy to see that all components are necessary, they are not independent, except that stimuli are selected and therefore not the prime movers of behavior.

Here is where synergy is easily seen. While man's perceptual processes, and the subsequent meanings assigned to various stimuli, will influence the choice of behavior, the consequences of behavior will have a reciprocal effect on perception as the individual may become aware of something new and expanded awareness will influence new behavior. In this context the phrase 'Love is reflected in Love' takes on a more substantial meaning as does the 'reciprocity effect'. Middlebrook stated,

> In addition to perceiving another person and forming an impression of how he sees you, you tend to form an impression of what he thinks you think of him. And others have the same spiral of 'reciprocal perspectives' as they interact with you (Middlebrook, 1974, pg. 412).

It would seem quite apparent that the study of stimuli and behavior is important to an advanced understanding of human development. But, to stop at this point would be a gross error since the decision-making process contained within the mind, or which may be the mind, is the ultimate component and its programming is the key factor. Behavior itself does not imply understanding, to study behavior alone is inadequate in itself to study the human idea. Johann Wolfgang Von Goethe wrote, "Behavior is a mirror in which every one displays his image", and to this can be added that both behavior and image are essential ingredients towards a greater understanding of mankind.

Abraham Maslow (1964) reviewed the works of Ruth Benedict, a student of anthropology. Benedict (1934) had been studying various groups of native people and was attempting to compare them on age, geography, climate, size, wealth, and complexity, but all classifications

failed to find the key to why certain societies were more successful
than others. Maslow described how Benedict came to the conclusion
that studying behavior would not work but what did work was the analysis
of the function of behavior, the meaning that behavior purported and
what character structure it expressed.

For example, suicide is a behavior which is viewed in America
as a psychological catastrophe since it is evidence that man is no lon-
ger willing to deal with the perceived situation. However, in primitive
societies, suicide was sometimes the final loving duty of a wife in
mourning. Thus, the study of behavior itself would be inappropriate
without searching the values, beliefs and perceptions of the person.

Well, Benedict came to the realization that synergy was the
most appropriate way to classify high and low aggressive societies.
She wrote,

> I shall speak of cultures with low-synergy where the
> social structure provides for acts which are mutually op-
> posed and counteractive, and of cultures with high-synergy
> where it provides for acts which are mutually reinforcing
> (Benedict in Maslow, 1964, pg. 156).

In reviewing her work, Maslow described the characteristics
of high and low synergetic societies. In high synergetic groups wealth
was siphoned so that wealth did not accumulate on wealth. Also, use of
goods was more open rather than restricted ownership, and religion was
comforting, not based on fear. It is interesting to note that our soc-
iety is made up of a mixture, we have taxes which attempt to distribute
wealth, but we have a mathematical curve and grading which is low-
synergetic. That is, if a class is graded according to the normal
curve, I might be pleased to learn that several peers have received a
grade which is below the median since there is a greater probability
that I will be ranked above the median. However, if everyone in my

class was to get the average grade, then this would be high—synergetic since if I turned in a top performance it would be good for both my peers and myself.

The point of this discussion is first, to study the behavior of man necessarily means that we study both the person as well as the meaning of behavior. We must study more than just objective behavior because an accurate understanding of mankind in action is crucially dependent upon cognitive processes. To emphasize this point is a passage by Correll,

Our thought determines our experience and our thought is the substance of our expression. How important then to examine our feelings, motives and affections, for out of these, out of our thinking, come the issues of life. Here is the key to our experience (Correll, 1971).

From a different perspective, Lerner (1976) discusses self-fulfilling prophecy and social stereotypes. In his writings he notes that physical characteristics (color, race) lead to stereotypes. On the basis of this categorization negative behavioral expectations are afforded members of a stereotyped group and these attributions are associated with particular experiences for members of that group. These differential situations delimit the range of possible behaviors so the behaviors which were stereotypically attributed to that group become a reality. Here again, the source of behavior is thought much like the source of a stream being the fount!

It is interesting to note briefly, the works of several authors which support the present discussion. D.C. Dennett (1969) questioned whether or not neural impulses have content. He made it clear that storage of information does not imply understanding since an encyclopedia can store information (actually it is only ink on paper positioned to carry a meaning) and understand none of it. Understanding is

the key factor, not the stimulus nor the neural impulse.

From a slightly different angle, J.A. Fodor (1975) considered the language of thought. Through his reasoning, it was concluded that man is able to compute probabilities and in fact does this when making decisions as to a course of action. But, such a computational system implies a representational system (a medium for computation). And, he continued, a representational system implies an innate language as separate from the spoken language. Finally, he said that the innate language must therefore be more complex than any other language. To this is added that both Dennett and Fodor have lead us to the mind, that immeasurable and unfathomable essence which without, there would not be consciousness as we know it in this earthly environment.

The term interaction is not far removed from the meaning of synergy. While the latter refers to working together, or in cooperation, interaction simply means action on each other. In other words, synergy is a special form of interaction, it is a cooperative form as opposed to what could be an aggressive competitive form of interchange. This, what may seem to be a subtle difference, may actually be a crucial issue in the determination of each individual's focus of motivation. That is, a person X may see himself working for a goal such as a promotion which may be hard to reach because several others want to obtain the same goal. The focus here is placed on success and on competition. Person Y, in the same situation, may see himself providing a service to others in his present position while at the same time being aware of other positions. The focus of motivation in this case is maintained in the present reference.

In this example, person Y is in what may be called a synergetic frame of mind while person X is in a particular state of mind

produced by focus on competitive interaction. Both situations involve an interaction between the person and the environment however there is a different focus of motivation for the two people such that there will undoubtedly be differential behaviors which can be attributed to the interaction between the person's focus and the environmental demands.

Kurt Lewin has presented an interactional model in an attempt to describe human behavior and his work goes under the heading 'Field Theory' (Lewin, 1936). This theory was a product of physical field theory presented by physicists Maxwell, Hertz and Einstein. Another influence on Lewin was that of Gestalt psychology which was initiated by Max Wertheimer, Wolfgang Kohler and Kurt Koffka. Hall and Lindzey wrote,

> The chief tenet of Gestalt psychology is that the way in which an object is perceived is determined by the total context or configuration in which the object is embedded. Relationships among components of a perceptual field rather than the fixed characteristics of the individual components determine perception (Hall & Lindzey, 1957).

Lewin's theory is summarized under three points; (a) behavior is a function of the field which exists at the time the behavior occurs, (b) analysis begins with the situation as a whole from which are differentiated the component parts, and (c) the concrete person in a concrete situation can be represented mathematically.

Since field is defined as "the totality of coexisting facts which are conceived of as mutually interdependent" (Lewin, 1951, pg. 240), it becomes clear that Lewin could hardly accept the proposal that behavior is a function of the person or of the situation alone. Instead, behavior is a function of their interaction. His 'life space', represented as a person encompassed by an environmental space, emphasizes both the person and the psychological environment. In fact,

behavior, within this theory, is said to be a function of life space.

From this basic concept Lewin went on to divide the person into various intercommunicating and interdependent parts. Also, he sub-divided the environment into a heterogeneous group of facts which are unequally influential on the heterogeneous person. He dealt with locomotion and communication as well as needs, tension, valences and force. He also pointed out that the goal of all psychological proc- esses was to return the person to a state of equilibrium (defined as a state of equal tension) as opposed to disequilibrium (a state of un- equal tension).

These ideas have been expanded in 'interactional psychology' which has been supported by the works of N.S. Endler and D. Magnusson. In the text which they edited entitled, Interactional Psychology and Personality, a long list of papers was presented geared at the limi- tations of the trait view of behavior, as well as strict situational- ism. They wrote,

> According to interactionism, actual behavior is the result of an indispensable, continuous interaction between the person and the situations he encounters. This implies that the individual's behavior is influenced by significant features of the situations, but furthermore the individual chooses the situations in which he performs and selects significant aspects which then serve as cues for his activ- ities in these situations. He subsequently affects the character of these situations (Endler & Magnusson, 1976).

It becomes apparent that interactionism is almost identical in meaning to synergy, only the competitive-cooperative factor remains an issue. While the interactionist studies person by situation inter- actions, a synergetic approach would attempt to point out interactions which were mutually beneficial to all interacting parties.

It is from this point that we must return to the person since it is the person component of the interaction between man and environ-

ment that will dictate awareness of one or another parts of the sit-
uation. J.M. Hinton has written on awareness in a short but compli-
cated expose which deals with experiences. The essence of his philo-
sophical approach to the problem is that unless we are aware of a sit-
uational component, it is not possible to react to it (Hinton, 1973).

It is therefore interesting to note the field of psycholog-
ical study called phenomenology. This area is the systematic study of
conscious experience as experience. An experiment which could fall
within this realm of research dealt with awareness of a differential
character trait by a guest speaker (Kelley, 1950). This study clearly
demonstrated the influence of beliefs on behavior.

Students in a particular class in college were given written
descriptions of a guest lecturer prior to his appearance. The descrip-
tions were indentical but for one word. On one-half of the description
sheets it was written that the guest was a very 'warm' person while on
the other half it was written that the guest speaker was a very 'cold'
person. Otherwise the descriptions were identical and, the members of
the class were not aware that the outlines which they had received were
not identical.

It was found that those who had received the 'warm' descrip-
tion rated the lecturer as more considerate of others, more sociable,
humorous and humane besides being better natured. These findings re-
flect very clearly the beliefs of what character traits go with warmth
and coldness, as well as the effect that previous information can have
with regard to person perception (Kelley, 1950). Indeed, it would
suggest that one goal of mankind would be to teach objectivity and the
formulation of one's own opinions unbiased by negative inferences.
There are many other examples of research which support this reasoning

and it is from such works that Hamachek was prompted to say, "Our be-
liefs influence our perceptions, nurture our assumptions, and to a
large extent determine our behavior" (Hamachek, 1971, pg. 39). With
this thought, and the argument which leads us again to the study of
the person, an examination of a most salient research issue is in order.

    B. <u>Intrinsic Motivation</u>

        C.L. Kleinke stated, "When people become less aware of exter-
nal forces influencing their behaviors, they are more likely to inter-
pret their actions as a product of intrinsic motivation" (Kleinke, 1978,
pg. 139). This statement emphasized the relatively new concept of
motivation as being attributable to internal or external forces. While
the idea of internal and external influences is not new (Freud (1915)
spoke of instincts and drives over one-half century ago and Watson
(1925) spoke of external contingencies at around the same time), the
concept of motivation has developed into an intrinsic-extrinsic debate
of major proportions.

        J. McV. Hunt (1971) traced the history of 'intrinsic motiva-
tion', a phrase that has been defined in various ways. Hunt called it
motivation which is inherent in information processing and action.
E. Deci, said that intrinsically motivated behavior refers to "behav-
iors which a person engages in to feel competent and self-determining"
(Deci, 1975a, pg. 61). However, experimental studies have been con-
ducted using an operational definition which assumes that intrinsically
motivated behavior is action undertaken for no obvious external con-
tingency. This operational definition is a considerable jump from
Deci's definition and it is at this point that to gain a more full
understanding of the concept, an examination of the roots of intrinsic
motivation is in order.

Before doing so, a crucial point must be made with regard to awareness. As previously mentioned, that of which one is aware may influence and likely will influence behavior. Thus, if a person is less aware of external forces influencing behavior, he will be more apt to attribute the reasons for action to intrinsic factors or, to intrinsic motivation. Because of the proliferation of educational and behavioral management projects which make use of various types of ex- trinsic rewards, it must be clearly emphasized that a danger exists whereby the use of extrinsic rewards may be detrimental both to high in- trinsic interest as well as behavior. In such cases there may be a focus of attention shift attributing the cause of action to the external re- ward which may set up a counter-control effect. There are two situa- tions, one where focus of attention is shifted to an external contin- gency in order to reinforce desirable from undesirable behavior, and secondly, there is a focus of attention shift from a socially desirable behavior to an extrinsic contingency which may change the perceived locus of causation from intrinsic motivation to extrinsic contingency. The entire debate is wrapped up within the five component model prev- iously described, with emphasis on the central processor which involves values, awareness and perception. Indeed the intrinsic motivation de- bate is not divorced from the previous discussion on synergy and inter- action.

Turning to the historical background of 'intrinsic motivation', it is immediately apparent that this phrase is a semantic advancement rather than referal to some entity which has not existed until recently. Those persons who studied man in earlier periods made use of other terms to describe causes of behavior although they may not have been aware of the words 'intrinsic' and 'motivation'. The following summary is based

on Hunt's (1971) research into the background of what we today refer to as intrinsic motivation.

From Zeno (340-265 B.C.) to Marcus Aurelius (121-180 A.D.) the dominant philosophy of conduct was provided by the Stoics. These were the scholars of the Stoa, or Painted Porch, and they provided the basis of conduct with reference to ethics and morality. They were influenced by Socrates (470-399 B.C.) and they presented two ideals, one being the ideal of the 'wise man', or individual responsibility in which the soul interprets the sensory inputs in the form of perceptions and then by reasoning, transforms the feelings from these perceptions into acts. Thus, reason is an independent function of the soul or person which is separate from everything external.

The second ideal goes beyond the first. Man must not merely think however. His thought must produce activity or behavior and that behavior must result in satisfying conduct. But, "if the passions aroused by the senses achieve control, the result is evil for others and painful for the individual controlled by his passions" (Hunt, 1971, pg. 25). This aspect of Stoicism was a major source of Christian doctrine and it held that the prime motive or intrinsic motive of man must be that of individual responsibility towards satisfying conduct.

Another major source of Christianity were the teachings of Jesus of Nazareth (6 or 7 B.C. - 26 A.D.). Briefly, his philosophy can be seen in his lecture referred to as 'the sermon on the mount'. The statements which he made at that time do not seem to be in opposition to Stoicism as they reflect personal responsibility. The Beattitudes, as they are often called, presented the picture of ideal man, hungering and thirsting after righteousness, being merciful and being pure in heart. Indeed this view of man, as well as the Stoics, taught that man

should be 'intrinsically motivated' to think good and to focus atten-
tion on personal responsibility for behavior. Jesus, of course, lec-
tured and behaved in a fashion beyond the understanding of Stoic doc-
trine.

At about the end of the fourth century Christian dogma was
formulated by St. Augustine (354-430). This formulation did not equate
with the teachings of Jesus nor the Stoics as it was mixed with the
works of Plato (427-347 B.C.) which provided a place for the mystical
and supernatural. As a result, St. Augustine promoted the idea that
faith is the only basis for certain knowledge since it is the will to
believe which gives certainty. Following from this, primacy is given
to the irrational aspect of man, the will, but even that must bend to
Church authority. However, this action would be rewarded "by sharing
in the bliss of God which comes with confidence in pardoning grace"
(Hunt, 1971, pg. 26). The shortcomings of faith alone are noted by
the once popular belief that the world was flat. Certain knowledge
based on faith alone, in this example is clearly erroneous.

Not until the age of St. Thomas Aquinas (1224-1274) would
there be any major change in Christian dogma. Of note only is the work
of Abelard (1079-1142) who subordinated church dogma to reason. In
essence, it seems that Abelard proposed understanding rather than blind
faith as he stated that through doubt one comes to investigate and
through investigation one 'hopefully' finds truth.

His efforts were, however, quickly forgotten with the emer-
gence of St. Thomas Aquinas. St. Thomas wrote of 'the good' and 'the
intellect' and he believed that the intellect is primal for it deter-
mines what the will is by showing it what the good is. Intrinsic moti-
vation then, may be wrapped up in his discussions of 'the intellect'

and 'good' as manifested by a more rational will. St. Thomas contended that the intellect is determined by the truth so long as the intellect is true to itself. The occurence of sin then is a product of man, when his senses conquer his intellectually determined will. Apparently, however, previously established beliefs remained as the works of St. Augustine prevailed until the Renaissance.

Rene Descartes (1596-1650) was the next influential figure through his dogma of monistic materialism. Hunt wrote of Descartes,

> In formulating a mechanistic explanation of the behavior of animals, he led the way to a mechanistic explanation of human conduct once the doctrine of evolution lessened the chasm of distinction between men and animals. This appears to have made the way for our twentieth century version of irrational motivation. Within the context of this long-standing controversy over the primacy of intellect and will, or the primacy of the rational over the irrational, the new-found evidence of an essential role for information processing in the answers to all the motivation questions tends to re-establish the classical primacy of intellect and rationality in the determination of human conduct (1971, pg. 27).

To this point then, intrinsic motivation may be a part of an informationally-based motivational system, specifically that part, based on 'the good'. Any other stimulus motive may be what is known today as extrinsic motivation.

Descartes is said to be the influence which promoted a mechanistic view of man, and he was likely influenced by researchers in the natural sciences which was in its infancy in the seventeenth century. The investigations of Galileo (1564-1642) confirmed the speculations of Copernicus (1473-1543) and Bruno (1548-1600) in astronomy and physics and this was done both through the use of mathematics and other methods of measurement and observation. So, Descartes adopted a mathematical method and in a deductive fashion he demanded a mechanical explanation of nature, including the behavior of animals. And he, more than anyone

else, is credited with the new directions in scientific thought.

At this point in history, Hunt saw two strands of a rope which run into present day thinking. One strand likely ran through the development of modern hedonism starting with Hobbes (1588-1679), and running through the British associationists through the influence of Jeremy Bentham (1748-1832). The other line or strand of this rope was on the mechanistic side running through LaMatrie (1709-1751) who abandoned the soul in the case of humans, as he had accepted the mechanistic conception of animal behavior. This mechanistic materialism was prevalent in the French school of thought as evidenced by the works of Claude Bernard (1813-1878). Bernard believed the internal milieu was one source of drive stimuli and this resulted in the physiology of drive. Investigations took place with regard to bodily changes in hunger, rage and fear at a later date in the United States by W.B. Cannon (1871-1945). Finally, J.B. Watson's writings on 'Behaviorism' may also be reflective of this mechanistic philosophy dating to the works of Descartes.

Another important influence was Charles Darwin who published The Origin of Species in 1859. His hypothesis of evolution had the impact of reducing the distance between man and the rest of animal life which gave further impetus to the mechanistic viewpoint.

We are left with two particularly influential philosophies of life and science. On one side we have a humanistic stance and on the other a mechanistic viewpoint out of which evolved drive-theory. Moving into the twentieth century the term motivation had still not arrived as instincts, needs and drives were discussed. Not until the 1940's and the work of Abraham Maslow (1943) was the term used although its meaning was not completely divorced from 'drive'.

Drive theory was central to the psychoanalytic theory of Sigmund Freud (1900, 1905, 1915) as well as other psychoanalytic theories. The drive of sexual urges is the hallmark of Freud's theories.

Hunt pointed out finally that the concept of drive and reward came into the theorizing of Clark Hull directly from Freud's psychoanalytic theory. In 1936 at Yale University, Hull conducted a seminar at which were present a number of prominent psychologists who had been educated in Freudian thought. It was at this time that the concept of drive and the concept of reward as reduction in drive were born. And here was the implantation of a psychology mixed with American behaviorism and Freudian psychoanalysis.

Other contributions which would later result in the birth of intrinsic motivation were many. R.S. Woodworth (1918) published Dynamic Psychology; Kurt Lewin presented his (1936) Principles of Topological Psychology; H.W. Nissen (1930) examined exploratory behavior; N.E. Miller and J. Dollard (1941) wrote on social learning and imitation; and P.T. Young (1943) wrote on emotion in man and animal, "Its nature and relation to attitude and motive".

The industrial revolution and subsequent advances in technology have made it possible for a great amount of effort to be expended in psychological study. In fact, not only has it become possible for a society to emphasize study of the thoughts of man but it seems to have become necessary. The larger urban populations with increases in manufacturing, government and education plus the variety of social interaction as opposed to a rural society, has brought what seems to be a great need to better understand the nature of man.

Before ending this brief review of the background to intrinsic motivation, it is important to note a further realization within

the two branches of psychological theory. On the one side, the mechanistic view which gave rise to drive theory, there is considerable debate. It has been found that there are a number of serious limitations to drive theory. Clearly, drive theory allows very little in the way of creative adaptation within either organismic or human nature. Control of action is placed outside the domain of intellect, intelligence and wisdom, and education becomes rather a matter of training than creative development. On the other hand, Freud's assertion was that all behavior was motivated and, it was motivated by forces extrinsic to information processing. But, there is evidence that organisms fail to become quiescent in the absence of extrinsic forces.

Two studies of stimulus deprivation, (Bexton, Heron & Scott, 1954; Heron, Doane, & Scott, 1956) present a challenge to drive theory. In these two studies, even though subjects were well-fed, free of pain and strong stimulation, were without allusions to sex, and were paid $20.00 per day, they would not remain quiescent. This evidence makes it difficult to accept the hypothesis that all behavior is undertaken to reduce drive to a minimum. Further, as has previously been noted, Leuba (1955) published a paper on optimal stimulation (further expanded upon by Haber, 1958), in which he strongly emphasized the fact that man is not simply motivated to reduce drives. There seems to be a need for stimulation (Nissen, 1930) and there may be an urge to mastery (Hendrik, 1943). Recently, there has been an outgrowth from these works into the realm of competence (White, 1959; Deci, 1975) and self-actualization (Smith, 1973; Deci, 1975).

Paralleling this criticism of the mechanistic school of psychology is attention to the second branch which seems almost to have endured through the middle ages, and through the works of Descartes.

This more humanistic concept of man promotes competence and the role of joy in learning. Schiller (1795) wrote on moral development through play. Rousseau (1762) was against authority as a substitute for a child's mental efforts, while a somewhat over-looked writer as far as education is concerned M.B. Eddy stated,

> The entire education of children should be such as to form habits of obedience to the moral and spiritual law, with which the child can meet and master the belief in so-called physical laws, a belief which breeds disease (Eddy, 1875, pg. 62).

Finally, in 1950, H.F. Harlow published a series of experiments in which referral was made to the intrinsic motivation of rhesus monkeys. In one of these papers (Harlow, Harlow & Meyer, 1950) four rhesus monkeys were given twelve day's experience manipulating a mechanical puzzle with a solution that did not lead to any incentive such as food or water. There were four matched control subjects who had the unassembled puzzle in their cages.

The performance of the two groups was compared by observing their responses to the assembled puzzle during five, five-minute periods on days thirteen and fourteen. While expectedly, the experimental monkeys were more efficient at solving the puzzles, it is interesting to note that subsequent introduction of food tended to disrupt, not facilitate, the learned performances of these experimental subjects. The authors postulated that a manipulation drive, strong and extremely persistent, must account for learning and maintenance of the puzzle performance. Further, they stated that drives of this class represent a form of motivation which may be as primary and as important as the homeostatic drives.

In a second study Harlow (1950) came to a similar conclusion, that a manipulation drive interpretation must account for learning and

maintenance of mechanical puzzle performance.

Two points are noted from this work. First, Harlow dealt with the question of external rewards on a so-called manipulation drive and secondly, he used the phrase 'intrinsically motivated complex puzzle performance'. His work will be viewed as the beginning point of the question which is most pertinent today, "What are the effects of external rewards on intrinsically motivated behavior?"

C. Sport and Motivation

A short time ago a hockey game was played in which one team (team A) took a quick lead over Team B and dominated play well into the third period. By that time Team A had a two goal lead and with little time remaining seemed to become aware of the possibility they could win the game if they just played good defense. Team B, which had been kept on the defense for most of the game, then proceeded to attack with more and more confidence and with only minutes remaining, a goal was scored. This goal seemed to give new spark to Team B which scored again with only seconds remaining in the game which then ended in a tie.

One fall a college football game took place between two long-standing rivals. At one point in the game Team A was forced into a third down situation and with little time remaining in the game, elected to fake a punt. Both the spectators and the defensive team B were well aware of the circumstance and the defense alligned itself in order to stop the fake punt. They did this by spreading their defense along the line of scrimmage and by dropping two safety men in position to cover the pass. There was little hope for this supposedly surprise tactic.

When the ball was snapped, the kicker took a short step as if to punt and then ran to his right. There, he was met by what seemed

to be six or seven opposing players who immediately stopped his forward progress. Team B, which now had good field position, advanced the ball before returning it to team A who then ran out of time in their attempt to move the full length of the field.

These short scenes are presented for particular purpose. First, in the hockey game, a change of momentum took place which would seem to be directly related to a change in focus of attention. Team A, which was in a position to win the game, shifted their attention to defense in order to win. This shift of focus resulted in different behavior for both teams, Team A became defensive and team B went to the attack and eventually tied the score.

In the football example, the young punter was given orders to fake a punt. However, once on the field and in a situation which would suggest that the punt should not be faked, he ran as he was told to do. In this case he did not react to the situation spontaneously, his focus of attention was on running the football to the extent he could not see that the play would be disasterous.

On the theoretical side Straub (1978) edited a book on Sport Psychology, and included no less than nine articles on motive theory. These nine articles, which take up more than one-third of the text, include various prescriptions for athlete motivation. The table of contents looks much like a pharmaceutical brochure advertizing various treatments and cures for common ailments. D.M. Landers wrote on the role of arousal and attentional factors; J.D. Lawther wrote on developmental stages for motivation in sport; W. Halliwell dealt with intrinsic motivation; M.E. Duquin discussed the dynamics of athletic persistence; R.B. Alderman addressed himself to strategies for motivating young athletes and so on. All this points to the awareness that moti-

vation is recognized as a key factor in sport performance.

In fact, there would seem to be no other area so important with respect to learning and performance, than motivation. Without a motive, without some incentive, or drive, or reason to move, would not the organism cease to be active? And yet, the human being would have to be motivated in some fashion to remain sessile since it is the very nature of man to move and to explore.

The fundamental nature of motivational study is reflected in an article by Singer (1978). In that work entitled "Sports Psychology: An Overview" he noted, first of all, that this area of study has only recently arrived in North America. Then he added,

> The discipline of psychology is associated with attempts
> to describe, explain, and predict behavior...Sports psychology
> is an applied psychology, the science of psychology applied
> to athletes and athletic situations. In a broader context,
> the one I would propose, it refers to psychology and the
> medium of sports, with consideration for individuals of all
> ages, both sexes, and with varying degrees of skill (Singer,
> 1978, pg. 5).

As can be seen from the description of psychology, the question of 'why', the motive for behavior, is the key issue. To describe, explain and predict behavior necessarily means that 'why' must be dealt with. In addition, because sport psychology is more or less a subdivision of its parent, general psychology, the specific field can be viewed as the offspring of the parent body. That is, the progress in sport psychology is relatively dependent upon general psychological theory.

Singer went on to list six typical psychological problems confronting any coach. These six are:

(a) The identification of athletes with ideal psychological attributes who will make the squad, and useful contributions.

(b) The understanding and treatment of younger athletes.

(c) The progression of athletes as quickly as possible from perform-
     ance potential to performance realization.

(d) The motivation of athletes during the pre-season, season, pre-
     event, and event.

(e) The development of team morale, effective competitive and cooper-
     ative situations, and understanding of group dynamics and leader-
     ship.

(f) Understanding the psychological problems of individual athletes.

     This interesting array of concerns unanimously implies the
extreme need to understand motives, although only statement (d) dir-
ectly mentions the term. Statement (a) refers to psychological attri-
butes which are undoubtedly reflective of motives. Statement (b) in-
volves understanding youth and therefore indirectly infers understand-
ing motives. Statement (c) involves motivation as do both statements
(e) and (f). Indeed, the study of motivation in sport is as fundamen-
tal an area as it is for general education, work and industry.

D. <u>Summary</u>

     Psychologists have a number of crucial issues to face in the
study of human motivation. First, the study of man and his motives
dictates the awareness that the definition of a human as mortal and
physical, carries many fundamental assumptions. These assumptions
have undoubtedly influenced the nature of research as well as the in-
terpretation of findings. If no more, at least this problem of defin-
ition must be aired since it is too quickly forgotten due to the em-
phasis on matter and the physical senses.

     Secondly, the study of motivation is insufficient should it
be concerned with immediate incentives only. Underlying an achievement

motive, for example, may be the need for recognition and respect. Such basic needs are fundamental to the further understanding of behavior.

A third issue concerns self-perception since such a belief, however moulded, will affect awareness and interpretation. Indeed self-concept would seem to underlie basic growth needs and both underlie contemporary incentives. It may be that the study of these 'parts' as a unit may shed considerable light on the nature of behavioral cause.

The discussion on synergy and interaction presented a fourth issue which is related to the previous three. Mention of life space and perception of environment suggested that an examination be made of various self and situational perceptions, basic needs and immediate incentives as well as specific sport environment behavior.

Finally, a review of the historical background to intrinsic motivation focused close attention on the individual. While one line of belief presented man as a machine, today reflected by behavioristic theory, a second clings to the belief that man is naturally motivated to explore and to create without external inducements. The latter proposition would develop personal responsibility and self-control while the former delimits man as contingency controlled and therefore tending to become dependent.

CHAPTER II

RELATED LITERATURE ON THE MOTIVATION OF PSYCHOLOGY

A. Motivation Theory

1. The Concept of Motivation

Beck (1978) has provided an excellent review of the present state of motivation theory with emphasis on mechanism. His work will provide the bases to help clarify what is involved when the term motivation is used. It will also provide the structure for discussion on incentive and achievement motivation.

It is a widely held belief that behavior is a function of learning as well as motivation rather than exclusively one or the other. This belief seems to be well founded since it seems that an individual could neither learn without a motive to do so, nor would motivation have any direction if separated from learning. Beck stated clearly that,

Motivation is broadly concerned with the contemporary determinants of choice (direction), persistence, and vigor of goal-directed behavior (1978, pg. 24).

When there is a choice of behaviors possible, one will be selected and the organism will persist with more or less vigor until some anticipated goal is either achieved or, until another goal becomes more dominant. Within this definition is the term contemporary which simply means, immediate and fluctuating causes of behavior as separate from more enduring factors such as learning.

The well known hierarchy of needs presented by Maslow (1954) may be used here to clarify further the meaning of motivation. Maslow's hierarchy includes physiological needs, safety needs, love, self-esteem

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and finally self-actualization. Lower needs such as the physiological, must be satisfied before higher order needs of love and self-esteem can be satisfied.

Relating this hierarchy to choice, direction and vigor of behavior, it may be said that the organism chooses the goal which is most dominant. For example, should there be a need for food and water which is very strong, the need of safety may be set to the side as risks are taken to obtain food. Persistence and vigor will be high in this case as long as there is a need to satisfy these physiological needs. However, it is clear that some fairly common human behaviors, such as suicide, cannot be explained by Maslow's model. For example early Christian martyrs are recorded to have continued their preachings despite being forewarned that they must stop or be put to death. For the purposes of the present discussion, however, the extremes of motivated behavior will not be dealt with except in a fashion which may help clarify the concept of motivation.

With regard to the direction of behavior, Beck included the terms desire and aversion. The basic premise here is that the organism approaches goals which are expected to have desirable outcomes and to avoid activities which are expected to have aversive outcomes. This is still not as simple as it may first appear since the meanings within desire and aversion may not be any more clear than motivation itself.

In order to clarify those constructs, use is made of intervening variables. An argument quickly becomes circular without such variables, as in the example, "Why does Joes Joe play football?..because he desires or is motivated to play football". This reasoning tells us nothing about why the choice of behavior was made because if asked how do we know Joe desires to play football, it may be answered by "because he plays".

In order to break out of this circle, use is made of intervening

variables, the components of which are antecedents and consequences.
Using the example of Joe again, one would hardly expect Joe to desire
to play football if he was born and raised in the high Alps where there
are no flat areas and where no one else plays football. Since there is
no antecedent condition in this case, there will not be football behav-
ior. Should Joe have been raised in central United States, the son of
a football coach, there would be antecedent conditions which would affect
behavior and in this instance promote football behavior. Based on this
reasoning it is possible to define desire to play football on the basis
of antecedent and consequent conditions diagrammed as follows:

Antecedent condition	Intervening variable	Consequent condition
Awareness of football rewards	Desire for rewards	Plays football
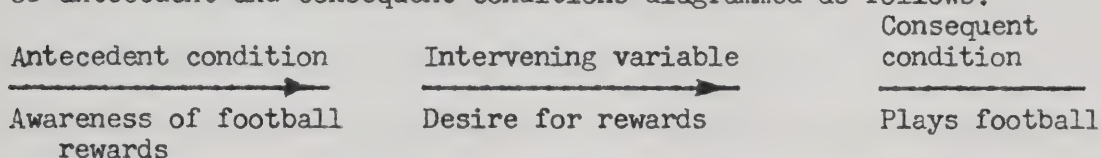
However, in actual fact it is more complicated than as is
described. Joe's behavior, while fitting this framework, is undoubtedly
the product of a great number of antecedent conditons including the im-
portance he places on taking part in the sport, other more or less con-
flicting interests, his physical size and running speed, the possibility
of being successful, the ability of the competition and so forth.

Beck pointed out that there are different ways to define inter-
vening variables. The most obvious of three reported ways is the stimu-
lus-response (S-R) relationship. The example of Joe playing football re-
flects S-R relations. An experimenter may make changes in the stimulus
conditions and measure changes in the response. That is, a coach may in-
crease or decrease Joe's perception of the value of taking part in the
sport to see what effect there is on his actual participation.

McClelland, Atkinson, Clark and Lowell (1953) in their work on
Achievement motivation made use of response-response (R-R) relations. In

this case, one set of responses was taken to define the intervening variable on the antecedent side and a second set of responses was taken on the consequence side. Under this paradigm, we could have Joe describe stories in response to picture stimuli and analyze his stories for achievement or for success. This is called a projective measure.

The second part of the R-R relation involves comparison with others on one or more other tasks to determine if there is a relationship between the story's reflection of achievement motivation or success motivation, and actual task performance.

A third way to define intervening variables is by use of organism-response (O-R) relations. In this case physiological measurements are included such as blood pressure, heart rate, galvanic skin response, electromyography, brain waves and other.

Of particular interest also is the criteria for calling an intervening variable motivational. That is, how may one decide whether or not a reliably identified intervening variable is motivational? Beck wrote, "If a change in the level of the intervening variable leads to a change in preference, persistence, or vigor of behavior, the intervening variable is motivational" (Beck, 1978, pg. 27). Further, and depending upon the nature of the change, we could call the variable desire or aversion.

Both persistence and vigor require qualification as well. Persistence, which refers to the amount of time spent at some activity, or the resistance to changeover to another activity, cannot be assumed a simple concept. As Atkinson (1964) has made clear, we cannot take any single behavior in isolation from other behaviors. In actual fact, life processes involve multiple-response situations. For example, how could we be sure we are measuring Joe's motivation to practice or play football

by measuring persistence in practice when one day it is warm and sunny and he has received a good grade in math, and on another day it is cold and rainy and he has an exam to prepare for? One would expect that in these two situations, very different motivational levels would be measured.

As for vigor, it too is an unclear concept. While there is little doubt that one can play hockey with little or great vigor, a different meaning of vigor is involved in activities such as curling. In hockey and football vigor may mean speed and force while in curling vigor carries a much different meaning.

As can be seen from this brief attention to the concept of motivation, we are shackled with definitional problems from the outset. Regardless, and with these limitations in mind, the study of focus of motivation will be the main thrust of the present investigation.

2. Incentive Motivation

Incentives are said to energize behavior. The expectation, or anticipation of reward, has become an important issue in motivation research since, as Bolles (1967) has pointed out, drives differ from incentives. The difference lies in the suggestion that 'primary' drives are considered to be biologically inevitable whereas incentives are learned and as such are not inevitable. Also, drives are cyclic or, they fluctuate with levels of deprivation. Incentive motivation, on the other hand, can be heightened whenever appropriate stimulus conditions are present.

Beck (1978) presented evidence in favor of an incentive motivation interpretation of behavior. He wrote that there has been accumulating evidence which has been categorized under five areas; (a) Amount of reward and reward shifts, (b) Quality of reward, (c) Incentive contrast effects, (d) Amount of deprivation and, (e) Latent learning and latent extinction. While there is abundant evidence to support an incentive

interpretation of motivation, attention will be placed on Beck's examples as they are most appropriate in supporting the points made within each of the five areas.

Crespi (1942) reported results which clearly support incentive shifts in rats. These animals received either 1, 4, 16, 64, or 256 food pellets which were located at the end of a straight runway. Not surprising are the results that the more pellets received, the faster the animals ran. Further, when the number of pellets was increased or decreased, appropriate changes in running speed took place. It was also reported that the improvement of the rats which were shifted from 1 to 16 pellets exceeded that of the 'original' learning of the 16 pellet group; this was interpreted as a change in incentive motivation. These findings were later replicated by Zeaman (1949).

As far as the quality of reward is concerned, it is not surprising to find that this factor also plays a role in incentive motivation. Simmons (1924) reported better maze performance by rats who were rewarded with bread and milk than by rats who were rewarded with sunflower seeds.

Further, because rats are noted for their desire for sugar solutions, Guttman (1953; 1954) varied the concentrations of sucrose or glucose solutions. Using a leaver pressing task, the number of responses per minute increased directly with the concentration of either sugar solution. This was interpreted as differences in incentive motivation since the amount of solution remained the same, only the concentration changed.

Incentive contrast effect refers to the situation in which differential incentives are available. Behaviors are reported to be different when either incentive is available as compared to when both are available. As evidence of this effect is a study by Collier and Marx (1959) who trained three groups of rats to obtain different sucrose solutions

from a dipper. Then, all of the rats pressed a lever for an 11.3% su-
crose solution. It was found that the animals which were shifted from
a high concentration down to 11.3% performed more poorly than the animals
maintained at 11.3% while the animals shifted up to 11.3% from a weaker
solution, performed better. In this instance there is evidence of both
negative and positive contrast effects.

Of course, logically, the greater the amount of deprivation,
the greater the incentive motivation. That is, food and water is far
less rewarding for a satiated animal than for one who has been semi-
starved. There is abundant evidence to support this conviction (Collier
& Myers, 1961; Beck & Ellis, 1966).

Finally, latent learning and latent extinction research supports
the concept of incentive motivation. With regard to latent learning, Tol-
man and Honzik (1930) trained animals in a maze using an experimental de-
sign incorporating three groups: no reward, regular food reward and de-
layed food reward. The results show that the rewarded group performed
much better than either of the other two groups. However, when the food
reward was given to the delayed food reward group, they immediately per-
formed at the level of the reward group. This is evidence in support of
learning which was not displayed in the form of high performance until
there was greater incentive to perform efficiently.

Latent extinction is manifested in the opposite direction.
When two groups of animals are trained with reward their performances
are equated. Then, when reward is removed for one group there is faster
extinction to the response.

These five areas provide us with evidence in support of theories
of incentive motivation. To date there are several formulations of how
the incentive phenomena operates and they are categorized into two main

groups, Response Theories and Control State Theories. A brief review of the theories contained within each major area is in order.

Within Response theories are the formulations of Hull (1952) and Spence (1956) as well as Mowrer (1960). The former authors developed the concept of fractional anticipatory goal response which is described as follows:

> When the animal is given food after responding, it eats. Eating is the goal response (R_G) and, of course, only occurs when there is food. At the same time, however, there are fractional goal responses, such as small chewing or licking movements or salivation, which can occur even without food. These fractional responses (r_g's) are considered condition-able. In a maze, for example, the environmental stimuli preceding the goal response could become conditioned stimuli for the fractional goal response(s). Similarly, internal stimuli present when the animals eats could also be condit-ioned to r_g's. After some number of experiences, such in-ternal and external stimuli at the start of the maze could arouse these r_g's so that the r_g's are anticipatory.
> These r_g's become motivational by virtue of the fact that they have stimulus consequences (s_g's) and these s_g's become conditioned to responses leading to the goal. We then have the sequence,
>
> $$S \longrightarrow (r_g - s_g) \longrightarrow R$$
>
> where S and R are external stimuli and overt responses (Beck, 1978, pg. 156).

For the purposes of the present paper there is no need to enter into debate of criticism of the Hull-Spence framework. What needs to be pointed out, however, is that the theory, as does behaviorist theory in general, deals with overt behavior while avoiding cognitive processes. And yet, the very nature of the r_g's (fractional responses) hints at cog-nition.

Mowrer (1960) presented a revised two-factor theory. His con-tribution, while involving a peripheral incentive theory, is based on fractional emotional responses rather than fractional consummatory res-ponses. The central component of his theory is that 'fear' is a fract-ional and conditionable component of all 'primary drive' states. On this

basis, behavior is controlled by anticipatory increases or decreases in the conditioned fear response.

The fundamentals of the two-factor theory, as revised by Mowrer includes all learning, in that it is by contiguity of two factors, 'drive increment' and 'drive decrement'. Many procedures may be used to produce 'primary' drives all of which produce a conditionable component of any drive, namely fear. Examples are pain fear, hunger fear, rejection fear and others. We have two terms then, drive which means the unconditioned state aroused by an antecedent motivational condition and fear, which is the conditionable emotional component of any unconditioned state. The basic postulate of this system is that organisms work to reduce fear such that all positively rewarding events are really fear reducing.

There is considerable criticism of Mowrer's formulation however. The most important issue that must be faced by all S-R theories is that of, "what gets a response started?" It appears that while associationist and behaviorist theory can offer a great deal of information about the mechanics of behavior, there is always a cut-off when it comes to initiation and thus, cognition.

As a result, there are alternative theories for incentive motivation which are labelled central state theories. Basically, in this grouping, it is assumed that incentive motivation is a process which is directly aroused by stimuli. This does not seem to be incongruent with the five component model discussed previously. First, there must be consciousness, a primary process, and second there must be stimuli. Which stimuli are selected is dependent upon the central processor or mind which selects meaningful stimuli which results in direct arousal.

Beck (1978) reviewed five central state theories. The first is Tolman's Systematic theory (1959), the formula of which is,

$$\begin{array}{l}\text{Performance} \\ \text{Tendency}\end{array} = f\left(\begin{array}{l}\text{drive} \\ \text{stimulation}\end{array}, \text{ expectancy, } \begin{array}{l}\text{incentive} \\ \text{valence}\end{array}\right)$$

These four terms, while similar to Hull's formulations, have dissimilarities of note. In defining the 4 components of the above formula these dissimilarities will become apparent. The components are:

Performance tendency – is an intervening variable equivalent to excitatory potential. It is the strength of the tendency for the expectancy $S_1R_1 - S_2$ to be expressed in behavior.

Drive stimulation – internal or external stimulation which is included as an activation principle. There are specific drive stimuli for specific goal objects and as such no 'general' activation function.

Expectancies – the entity that increases strength as a function of frequency, recency and distribution of occurrence. Included is the concept means-end-readiness (belief) which are cognitive dispositions.

Incentive valence – learned on the basis of experience with objects of particular values and as such, this phrase means objective value.

The second central state theory of interest is Young's (1968) 'Hedonic' theory of motivation. The basic premise of this theory is that incentive objects produce primary affective arousals which come to control behavior because stimuli which are repeatedly associated with them elicit conditioned affective arousals. Affective processes are defined in terms of their valence (positive or negative) as well as intensity and direction. Motives are acquired determinations which regulate the pattern of action as well as arouse or activate behavior.

With regards to the hedonic continuum, it is introduced primarily due to positive and negative affect. This is because affective processes differ in degree as well as kind and are ordered from maximal negative to maximal positive. The general rule for behavior is that organ-

isms attempt to maximize positive and minimize negative affect.

Three other theories which are central state in nature will be touched on only casually. Logan (1968) attended to the quantification of and organization of intervening variables. He assumed that each quantitative value of reward has a particular incentive value when the organism is exposed to it. Then, and over many experiences with this particular reward, incentive motivation increases to a maximal value as great as the incentive values.

Solomon and Corbit (1974) present 'Opponent Process' theory which suggests a non-associative effect of experience or hedonic processes. That is, every affective state, whether aversive or pleasurable, tends to arouse the opponent state. Examples are that extreme fear arouses the opponent process of pleasure such that when fear is removed, pleasure becomes overly dominant. In sport this process may be seen in the great release of sportsmen following the completion of highly intense, meaningful and anxiety producing game situations. Solomon and Corbit refer to these two opponents as A-state, the initial process, and B-state, the opponent process.

Finally, Morgan (1943; 1959) presents a theory called the 'Central Motive State (CMS)'. The properties of the CMS are; (a) it persists for sometime without outside sensory support, (b) it predisposes the organism to react in certain ways to some stimuli, but not others and, (c) it may directly cause certain responses to be emitted (Beck, 1978, pg. 173). Since this theory was originally designed to apply to drive states such as hunger and thirst it will only be recognized here as evidence against drive states aroused by peripheral events.

From this rather sketchy review of incentive motivation theory it may be generalized that incentive stimuli in some way predict the occur-

rence of rewarding events. As such, incentive stimuli must be learned although there is evidence of transfer effects of such predictive properties to new situations. From this, predictive relationships might develop in various conditioning situations.

More recently, Birch and Veroff (1966) have identified seven major motive-incentive systems which are claimed to be the main types of goal directed behavior in human beings. These seven systems are sensory, curiosity, achievement, aggression, affiliation, power and independence type behaviors. It is from this seven part system that Alderman and Wood (1976) developed a specialized incentive motivation inventory for sport which will be discussed later in the paper.

3. Achievement Motivation

As defined by Murray, need for achievement is a desire or tendency "to overcome obstacles, to exercise power, to strive to do something difficult as well and as quickly as possible" (Murray, 1938, pg. 80-81). As such, it is not far removed from incentive motivation and is of course, a scale in Birch and Veroff's (1966) schema.

Why is there attention on need achievement? Simply because of the demands of business, education and other such institutions which wish to know how to increase production efficiency. This is no less an issue in the sports medium where there is a constant, enduring desire by coaches and administrators to improve performance. In order to outline what is actually involved in achievement motivation, two theories will be reviewed.

McClelland and Co-workers (1953) presented a hedonic interpretation of need achievement (nAch). In this proposal, cues which have been previously associated with hedonically positive events produce in part, a re-arousal of the positive affect. Thus, the individual antici-

pates a pleasurable outcome and if this pleasurable affect was originally associated with achievement situation, there will be a greater tendency to re-engage in achievement behaviors. Equally, if there was originally negative affect, the individual may move to avoid future achievement situations.

Atkinson (1964) has built on the achievement theory in two important ways. First, he placed the theory into the framework of expectancy-value theory which is consistent with the formulations of Tolman and Kurt Lewin. Also, and of considerable importance was

the role of conflict between the desire or need to achieve and the fear of failure. Emphasis on this second point has resulted in considerable research on the tendency towards success (Ts) and the tendency to avoid failure (Taf).

Within Atkinson's theory, the tendency to engage in achievement-oriented behaviors (Ts) is a function of several elements multiplied together. The formula he presented is,

$$Ts = Ms \times Ps \times Is$$

where Ms is the motive to success (nAch), Ps is the perceived probability of success and Is is the incentive value of success or 1 - Ps. As an illustration of this formulation, Atkinson (1958) told a group of female subjects they were to compete for a prize of either $1.25 or $2.50. Four probabilities of winning were stated: 1/20, 1/3, 1/2, and 3/4. The results presented show that while the high reward group performed better on the task of drawing X's inside small circles for twenty minutes, performance declined for both groups when Ps, the perceived probability of success increased from 1/2 to 3/4.

With regards to T_{af}, or the tendency to avoid failure, a multiplicative formula is provided as well. That formula is,

$$T_{af} = M_{af} \times P_f \times 1\text{-}f$$

Where M_{af} is the motive to avoid failure, P_f is the probability of failure which is equal to $1\text{-}P_s$, and $1\text{-}f$ is the negative incentive value of failure which is equal $-P_s$. What this means is, if there is any motivation to avoid failure, there will be a tendency to avoid activities which have the potential of failure.

The inclusion of this cursory look at achievement motivation is made for a particular reason. When discussing motivation we naturally end up discussing cognition. There is no way out of it and while behaviorist theory would have us by-pass thinking to work on behavior, that in itself is not enough since understanding and perception are fundamental to all behavior. Therefore, in dealing with cognition we must necessarily discuss values and beliefs which directly or indirectly influence perception and ultimately behavior. The fact that incentives are crucially linked with values and beliefs and that incentive encompasses need achievement, impells consideration of the approach success, avoid failure suggestions of Atkinson.

4. Summary

The major inclusions discussed within the review on motivation are as follows: (a) motivation is refered to as behavior which is determined through choice (direction), persistence and vigor of goal-directed activity.

(b) Motivated behavior is recognized as desired activity (approach) as well as undesirable activity (aversion). Incentive motivation implies the anticipation of rewards which must be learned as opposed to 'primary' drives such as hunger (Bolles, 1967).

(c) Incentive motivation is evidenced by research in several areas, amount of reward, quality of reward, amount of deprivation, latent

learning and extinction as well as incentive contrast effects (Beck, 1978).

(d) Response theories (Hull, 1952; Spence, 1956; Mowrer, 1960) attempt and fail to explain behavior because they avoid dealing with central cognitive processes. Thus, central state theories offer an alternative. Important points which were raised were that incentive motivation is aroused rather than 'caused' by stimuli, and that achievement motivation is only a portion of overall incentive motivation.

(e) Finally, Atkinson (1964) placed emphasis on the tendencies to approach success and avoid failure. In so doing, multiplicative formulae were presented for each state which include three key components which may be generally refered to as learning (motive to achieve success) perception (perceived probability of success) and value (the incentive value of success).

B. Extrinsic Rewards and Intrinsic Motivation

1. Emphasis Pre - 1971

Drive Reduction

Berlyne (1950) examined exploratory behavior in rats and his investigations demonstrated several important points; (a) rats will spend more time exploring a novel stimulus than stimuli which they have previously been able to explore and (b) they spend less time exploring stimuli the second time they encounter them. These findings lead Berlyne to postulate that there is a response called curiosity and further, as curiosity arousing stimuli continue to affect an organism's receptors, curiosity will diminish. The importance of this finding lies in the clear result that all behavior is not solely oriented to reduce drives since the organism will actively approach novel situations.

This lead to further research such as that reported by Clarence Leuba in which he proposed a theory of optimal stimulation. He emphasized in his work that tension reduction is not the only principle of learning. As previously cited (page 6) in this thesis, Leuba made it clear that when over-all stimulation is low, the organism acquires reactions which are accompanied by increasing stimulation, and when over-all stimulation is high, acquires reactions which are accompanied by decreasing stimulation.

These findings resulted in studies on information deprivation (Jones, 1961) and lead to new ways of studying motivation. One of these alternative approaches was set forth by White (1959). In his paper which criticized both drive theory (for its inadequacy in explaining exploratory behavior) as well as psychoanalytic instincts (believed to be inadequate in ego development), White proposed the concept of 'competence'. The reasoning behind the proposal was that visual exploration, grasping, crawling, walking, attention and perception, language, thinking and exploring all have the same biological significance, that is, competence or the feeling of efficacy.

As a product of this change in perspective, studies are reported which deal with expected success, persistence and achievement related motives (Feather, 1961), affiliation (Zimbardo & Formica, 1963) and eventually through a line of investigation initiated by Heider (1944) and Rotter (1954) to a publication by Richard Decharms which deals with personal causation, or the "initiation by an individual of behavior intended to produce a change in his environment" (Decharms, 1968, pg. 6). Surely, there is adequate testament to the belief that Drive Theory with its tension reduction is inadequate in its effort to explain the broad spectrum of behaviors which have been studied.

Attribution Theory

H.H. Kelley (1967) published a paper, an outgrowth of Heider's (1958) work, entitled "Attribution Theory in Social Psychology" which was an attempt to obtain more detail as to the 'whys' of behavior. While this theory does not directly meet the question of intrinsic motivation it does provide information which points at man's search for the causes of his own behavioral performances.

Two stable and two unstable factors are recognized as determinants for the outcomes of events. The stable factors are task difficulty and ability while the unstable factors are luck and effort. A common experimental procedure is to question subjects about task outcomes concerning the reasons they believe to be responsible for a particular result. These four factors, task difficulty, ability, effort and luck, are said to be inclusive of all attributional categories.

A considerable amount of research has been published in the last few years which has been influenced by an attributional analysis of achievement motivation. Weiner and Kukla (1970) report six experiments which revealed that (a) the evaluation of achievement related outcomes is positively related to expended effort but is inversely related to level of ability, (b) there are disparities between 'self' and 'others' judgments as to behavioral attribution, (c) there are evaluative differences between social classes, (d) there are individual differences in locus of causality related to achievement needs with individuals high in achievement need being more likely to take personal responsibility for success, and (e) cognitions about causality mediate between level of achievement, needs and performance.

In support of this tendency of the person to look outward, is the finding that subjects who 'just' passed or 'just' failed were more likely to engage in external attribution than subjects with extreme scores (Feather, 1969). It is suggested that forms of extrinsic motivation may be major motives of society today which, not unlike the horse with a carrot in front of its nose, moves on an unending spiral of inflation and dissatisfaction.

Cognitive Dissonance

Leon Festinger (1957) presented a theory which suggested that a dissonance reduction process is within behavior. That is, when a person is doing something which may not be that pleasurable but which is done anyway, ie. washing the dishes, there are dissonant feelings such as that produced by a desire to go and watch television or do something else. Weick (1964) found that college students who did not get credit for participation in a concept attainment task persisted longer, performed better and rated the experience more favorably than subjects who were given credit for participation.

Relating this to the washing dishes situation presented in the introduction to this paper, the washer would perhaps want to watch television but would find herself washing dishes and feeling badly, would look for pleasure in the dishwashing, or would speculate that there is nothing good on television anyway. What is done here is that the dissonant state of mind is cleared to create consonance.

It is most important to note however that Weick reported that the non-credited group actually performed better, longer and rated the experience more favorably. On the other hand credited subjects, those who performed for an obvious external reward, would not experience dissonance since they would attribute their actions to the goal of getting

credit. By so-doing, however, they performed at a poorer level and enjoyed the experience less.

An interesting study was reported on changes in moral attitudes following temptation (Mills, 1958). Briefly, sixth grade students were measured in a situation which allowed them the option of cheating; they could either violate or comply with a moral standard against cheating. There were various rewards for winning at a prescribed task and there were different levels of restraints (i.e., it was easier for some subjects to cheat than others). The results clearly showed that those who chose not to cheat became more severe in their attitudes toward cheating. On the other hand, subjects who cheated became more lenient.

Applying this to the present discussion on dissonance we can see that the subjects were placed in a dissonance producing situation. In order to reduce this state, the subjects had two choices, cheat and win, or not cheat and possibly lose. After facing this decision the subjects then went on to become more engrained in their attitudes in justification of their actions.

Adams (1963) in his work motivation research, wrote on inequity which may also be an outgrowth from Festinger's (1957) original work. Using this dissonant state, Adams said that people try to maintain equity with society, that when there are inequitable feelings, the person will be driven to reduce it. That is, if feeling overpaid, a person will work harder and longer to reduce the feeling of inequity.

It is at this point that psychologists have encountered a problem that continues to persist. On the one hand a person who is poorly paid to do a job will have dissonant feelings and to reduce these feelings, ends up doing the job better and enjoying it more. On the other

hand, a person who is overpaid has feelings of inequity and works harder to make himself worthy of high payment. Industrial Psychologists have then reasoned from inequity theory, that if a person is underpaid he will perform at a lower level and enjoy it less, but dissonance studies have shown this not to be the case.

It is the contention of this paper that intrinsic motivation adequately explains these, apparently, contradictory findings. In the dissonance explanation, the person who is paid little is forced to either stay unhappy or find some enjoyment in the task, do it for the sake of doing it without meaningful external contingencies. One might say that the person is forced to look for intrinsic values.

The inequity situation can be viewed as a situation which produces greater output for extrinsic reasons. It suggests a mechanism where man, when faced with excess material gain, will work harder to be deserving and find satisfaction in the end.

As a result of this research, a series of studies were produced which may be labelled the 'forbidden toy studies' (Freedman, 1965; Pepitone et al, 1967; Lepper et al, 1970). Freedman investigated whether or not the arousal of cognitive dissonance would produce longterm behavioral effects. Children were told not to play with a very desirable toy. Those who did not play with it were given a second opportunity to play with the toy several weeks later, with the original threat removed. It was predicted that those subjects who had resisted temptation under mild threat would be less likely to play with the toy in the second session and this is, in fact, what resulted.

This result can be explained in terms of extrinsic motivation. These young children did as they were told; they obeyed, they behaved in order to win approval or avoid punishment. Then, when faced with the

possibility of playing with this toy or others in another observation period, they chose to avoid the forbidden toy (which may be due to memory of 'not supposed to play with it' or they may have developed an interest in one of the other toys which is explained by primacy effect). What is clear is that subjects who were externally influenced not to play with a certain toy, cannot be expected to forget about that situation over a short time period.

External-Internal Influence on Behavior

In the mid 1950's there is evidence of work which was done on the influence of external factors on behavior. While Harlow's work (Harlow et al, 1950; Harlow, 1950) instigated much of the research, it is of interest to pay some attention to the works of Kanfer and co-workers (1962; 1963). A prelude to these studies however was a paper by Linton (1955) which showed that field-dependent or field influenced subjects (subjects more affected by the external environment), were more prone to conformity behavior. It was suggested that perceptual performance reflects central tendencies of the person that may or may not emerge in a specific test of conformity, while behavior in any one conformity situation is subject to greater fluctuation as a result of more peripheral factors. This may be some of the first evidence that environmental perception, which must be closely linked to self-perception, is an influencing factor on conformity behavior.

Expanding on conformity and the fact that it is related to tendencies to be more influenced by the 'field', it is suggested that conformity is linked to extrinsically motivated behavior. Anti-conformist attention is also extrinsic since it is based on external motives to do with resisting conformity.

Turning now to Kanfer and Marston (1963), their concern was

likely a product of the increased interest in behaviorism spurred by the writings of B.F. Skinner (1953). These authors reported several interesting findings. They stated that vicarious reinforcement facilitated learning in experimental groups with direct reinforcement showing no additional effects, while control groups failed to learn. They also stated that self-reinforcement operates differently than external reinforcement.

This attention on reinforcement was reflected in Rotter's (1966) work on the development of an Internal-External scale. He reported that the individual who has a strong belief that rewards are a product of personal effort is likely to (a) be more alert to those aspects of the environment which provide useful information for his future behavior, (b) take steps to improve his environmental condition, (c) place greater value on skill or achievement reinforcements and be generally more concerned with his ability, particularly his failures, and (d) be resistive to subtle attempts to influence him.

However, Albert Bandura (1967) found that children imposed highly unfavorable schedules of reinforcement on themselves which was in the direction of high effort costs at minimum self-reward. Broden and co-workers (1970) found that experimental periods employing teacher attention and/or a token point system increased study levels and decreased disruptive behaviors. Short reversals gave further evidence to support the suggestion that external contingencies were being attended to by the subjects.

What does all this suggest? Certainly, and obviously, we are influenced by external contingencies. But what is more important is the implication that people may lie along a continuum from externally controlled to internally controlled. How they see themselves and how

they see the environment will be reflected in their aspirations and actions. The evidence appears to hint very strongly that youth should be taught to rely on intrinsic motivation whereas our education system and work system has developed a mechanistic basis which promotes attention to external rewards.

2. Emphasis Post - 1970

Cognitive Evaluation Theory

There is little doubt that E.L. Deci's paper (1971) which dealt with the effects of externally mediated rewards on intrinsic motivation provided a spark which resulted in extensive research on the nature of intrinsic motivation. At a time when applied behavior analysis was booming and education systems were instituting external reward systems most liberally, Deci provided experimental evidence which created doubt in the efficacy of using external rewards to promote learning.

After completing two experiments and one field study, Deci reported that (a) when money was used as an external reward, intrinsic motivation tended to decrease, whereas (b) when verbal reinforcement and positive feedback were used, intrinsic motivation tended to increase.

He published again (Deci, 1972) in an effort to reconcile the apparent inconsistency between the above reported results and equity and the non-contingent nature of rewards. The argument may be overemphasized however, as it does not seem the authors are far apart in their interpretations of the decreased play effect. But a reply was made (Deci, Cascio and Krusell, 1975) which essentially reviewed the cognitive evaluation theory. It was predicted that expected rewards would lead to a larger decrease in intrinsic motivation than would unexpected rewards.

Hamner and Foster (1975), studied the question of additivity

of extrinsic and intrinsic rewards under the heading, "A Test of Deci's Cognitive Evaluation Theory of Task Motivation". They reported two results; (a) there was no significant difference in level of task interest between contingent and non-contingent reward subjects with an interesting task. For a boring task the contingent-pay subjects were significantly more interested than the non contingent-pay and no pay subjects, (b) subjects who had an interesting task had a significantly lower output than subjects who had a boring task.

These results do not support previous findings and in fact the reported increases in interest by contingent pay subjects in the boring task is support for the use of extrinsic rewards. What is becoming clear is that administering rewards produces more complicated effects than what was first thought.

Advancing through the literature one ends with a debate between humanistic and mechanistic viewpoints. Scott (1975) in support of applied behavior analysis, suggested looking at a behavior modification explanation. He pointed out that there is no acceptable evidence that extrinsic reinforcers disrupt behavior and, the meaning of intrinsic motivation remains obscure.

Deci (1975b) counters with the suggestion that Scott holds to a mechanistic view of a person and that he has confused intrinsic motivation with behavior. He also noted that there are considerable difficulties with defining reinforcement. He then repeated again that motivated behaviors involve the need to be competent and self-determining. This motivation is innate and spurs such things as play, exploration, and subsequently the development of cognitive structures.

Frankly, it seems that Deci brushed against a most important point which is supported by Lefourt (1975). In a paper which reflected the

viewpoints B.F. Skinner's (1971) <u>Beyond Freedom and Dignity</u>, Lefcourt
dealt with the function of the illusions of control and freedom. In
that paper it is made quite clear that the sense of control, the 'illu-
sion' that one can exercise personal choice, has a definite and posi-
tive role in sustaining life.

Many other studies have been completed which have reported
both decreases and increases in intrinsic interest following external
reward. Pinder (1976) found that individuals who are non-contingently
paid may derive more intrinsic orientation toward the work while Karniol
and Ross (1977) found that subjects who received performance irrelevant
rewards showed decreased interest.

Swann and Pittman (1977) reported decreased interest when an
adult selected the activity and a reward was promised, while persistence
remained high when a performance-contingent reward was paired with ver-
bal reinforcement. Folger and colleagues (1978) emphasized the impor-
tance of choice as it was found that low choice high pay lead to greater
productivity, equated with intrinsic motivation, while high choice high
pay lead to reduced productivity or intrinsic motivation.

Most recently, Fisher (1978) reported that personal control
over performance was a very important determinant of intrinsic motivation
but the type of reward system did not affect intrinsic motivation. It
was also found that both competence and personal control had to be high
for intrinsic motivation to be high.

In summation there would seem to be a great deal of support
for the cognitive evaluation theory of Deci. In a recent
publication Easterbrook (1978) discussed a theory of respon-
sibility. He suggested that man's nature is toward self-government,
self-control and competence. Easterbrook stated that those who behave

responsibly should have greater range of knowledge and abilities, suffer fewer frustrations and display greater confidence. He said further, that men who report greater self-responsibility are more satisfied, self-disciplined and less anxious and driven by circumstances.

Overjustification and Competing Response Hypotheses

Another proposed explanation for the observed decreased interest following external rewards is a product of Self-perception Theory (Bem, 1972). Lepper, Greene and Nisbett (1973) tested the 'overjustification hypothesis' in a field experiment in which it was hypothesized that a person's intrinsic interest in an activity may be decreased by inducing him to engage in that activity as an explicit means to some extrinsic goal. In that particular study, children who were reported to have intrinsic interest in baseline observations on a drawing activity were exposed to three conditions, (a) expected-award condition, (b) unexpected award and, (c) no award.

The results supported the prediction that subjects in the expected-award condition would show less subsequent intrinsic interest in the target activity than would subjects in either of the other two conditions. In addition, it is interesting to note that the quality of the pictures in the expected award group was lower. These findings are interpreted as support for the overjustification hypothesis; i.e., that the subjects in the expected-award condition came to infer that their actions were basically motivated by the external contingencies of the situation rather than by the activity itself. And from this evidence and interpretation, the authors made reference to the complaints of Dewey (1900), Whitehead (1929), Holt (1964) and Silberman (1970), that the problem with our educational system is its inability to preserve the intrinsic interest in learning and exploration that children seem

to have when they enter school.

Several other researchers in the field disagreed with this reasoning. Reiss and Sushinsky (1975) published a paper with a different interpretation of the situation. They carried out two experiments, the first of which replicated the work of Greene and associates on a single trial of non-contingent promised reward, in which intrinsic interest was seemingly undermined. The second experiment 'disconfirmed' the overjustification hypothesis over a multiple trial reinforcement design. They explained these results in terms of competing response, that is, presentation of a novel play activity can be undermined by the presentation of distracting stimuli. Over a longer period these external contingencies no longer become distracting as evidenced by the results on the multiple trial design.

Lepper and Greene (1976) countered the criticism that intrinsic motivation is hard to identify by stating that reinforcement is equally hard to define. In a constructive effort to bring attention to possible integration of cognitive social psychology and applied behavior analysis, they suggested four points, (a) extrinsic rewards may convey information with regard to the probability that behavior would be reinforced in the future, (b) extrinsic rewards may be used to promote engagements of activities, (c) rewards may convey information to an individual concerning his ability or competence at a task, and (d) extrinsic rewards may lead individuals with initial interest in an activity to reattribute their interest in that activity to salient external factors, decreasing subsequent motivation.

Reiss and Sushinsky (1976) subsequently re-emphasized the competing response explanation of decreased play effects. In noting that the competing response hypothesis had its origin in Hull-Spence

Theory (Hull, 1952; Spence, 1956), they pointed out that any response that interferes with responses that facilitate task enjoyment can be termed a competing response. These responses include performance anxiety, frustrative delay of reward, embarrassment or guilt if the reward is perceived as socially inappropriate, hurried rates of performance, and both visual and cognitive distraction.

In relationship to these studies of decreased play effects, Reiss and Sushinsky wrote that simultaneous exposure to two reinforcing activities may arouse attentional approach - approach conflicts that are aversive. There are three reported ways that this can happen,

> (a) the arousal of unpleasant affect could lead to aversive Pavlovian conditioning, especially when moderate levels of performance anxiety or frustrative delay of reward are aroused, (b) the subject may recognize that he did not enjoy the activity during the experimental session, and this recognition could mediate a relatively persistent effect, and (c) the arousal of competing responses sometimes impairs performance quality, and the subject's recognition of such impairment could mediate a relatively persistent effect (Reiss and Sushinsky, 1976, pg. 235).

But the major prediction of the competing response hypothesis is that decreased play effects are stimulus novelty effects which weaken over repeated trials of reward contingent on performance quality.

Therefore, Greene, Sternberg and Lepper (1976) designed a token economy which was to specifically address the question of effects of rewards on intrinsic interest over multiple trials. The experiment included baseline measures of interest in mathematics games and a treatment phase during which differential reinforcement was made contingent upon time spent with designated 'target' activities.

The results showed that experimental groups which were differentially reinforced based on time spent with the designated 'target' activities spent significantly more time with the activities than did

non-differentially reinforced control subjects. Then, after different-
ial reinforcement was withdrawn, subjects in two of the three experi-
mental groups spent significantly less time with their target activities
than did control subjects. Low-interest subjects (measured from base-
line measures of interest in the activities) were even less interested
after withdrawal of rewards as were subjects in the choice group who
were told they were being allowed to choose for themselves which two
activities they would like to be the ones for which they could earn
rewards. Only the high interest reward group was not significantly
different from a high interest control group. They concluded that over-
justification effects are not limited to single-trial, noncontingent
reward procedures.

More recently, Smith and Pittman (1978) dealt with the effects
of reward with a focus on distraction and the overjustification effect.
Their reasoning was that while rewards may result in a shift in per-
ceived locus of motivation from intrinsic to extrinsic, the results of
decreased interest may also be explained by distraction. Distraction
implies that reward as well as non-reward distractors will produce de-
creases in intrinsic interest and this will dissipate over multiple
trials.

The results they report showed a constant decrease in interest
which is explained by an attributional explanation which is consistent
with overjustification. Further, the distraction manipulation did
affect free-choice behavior in a fashion consistent with the competing
response hypothesis.

As a result of this work, and other writings on the mainten-
ance of behavior, Arkes (1978) has suggested that the message of com-
petence is key to resolving the argument. In that paper it is proposed

that rewards conveying information that the person performing is competent, causes the behavior to become insulated from the overjustification effect. In addition, Arkes said the maintenance of behavior which results from competence information is shown to be a powerful factor in increasing transfer and post therapy persistence of behavior in both behavioral and traditional therapies.

We have now returned to a similar point that was reached in the review of studies which more directly dealt with Deci's cognitive evaluation theory. The key may very well be in the implied meaning of the reward or more accurately, the perceived meaning of the reward. Should the extrinsic reward be thought of as a payment, a buying of time and abilities, then the reason attributed by the individual is one of doing because 'one has to get the reward' and there is a counter-control effect. In this vein, the activity may not be the center of attention and therefore it may not be enjoyed as much. It would seem that competing response proponents should be satisfied with this logic.

On the other hand, if the message in the reward is one of 'good job', or 'you've done well', then there should not be an over-justification effect nor a distraction effect. And yet it is up to the individual to perceive that message which may be far from clear in the mechanistic approaches of various indiscriminant token economy situations.

Focus of Attention

To this point there seems to be an overwhelming implication that focus of attention shifts may be the root of the effects attributed to extrinsic rewards. So, Duval and Wickland (1973) performed two experiments to test the proposal that attribution of causality will be determined by the focus of attention. In the first experi-

ment, ten hypothetical situations were presented to subjects who then estimated the percentage in which he was causal in bringing out a negative consequence. One-half of the subjects performed a motor task while replying, to control for attention.

In the second experiment, five situations with a positive consequence and five with a negative consequence were presented while one-half of the subjects were to focus attention on themselves rather than the environment.

The results indicated that attribution of causality to the self was greater when attention was focused on the self. In addition, it was found that this effect operated independently of whether the consequences were good or bad.

Zanna, Lepper and Abelson (1973) studied kindergarten children who were prohibited from playing with a certain toy under mild threat and severe threat conditons. During the play period a janitor's remarks to the child were instituted to (a) bring attention to the fact that the child was not playing with the forbidden toy, or (b) bring attention to the initial threat of punishment. The results replicated the usual dissonance effect of derogation of the forbidden toy by the children under mild threat. However, focusing the child's attention on the pertinent features of the dissonant situation led to even greater derogation under mild threat.

These results are closely related to a study by Lepper (1973) which was very similar to the Zanna, Lepper, & Abelson (1973) study as children were asked not to play with an attractive toy under severe threat or mild threat conditions. After a three week period a different experimenter presented the children with the opportunity of winning prizes by falsifying their scores. As was predicted from self-perception theory,

those subjects who had previously complied under mild threat were more resistant to temptation than were subjects who had previously complied under severe threat.

It would seem from these studies that focus of attention is the key element. When attention is drawn to liking a forbidden toy, devaluation occurs most markedly. But, distraction itself is not enough to impair performance and this must be clear. Sanders and Baron (1975) performed two studies in which they showed that distraction can facilitate the performances of simple tasks and impair the performances of difficult tasks.

With this in mind it is reasonable to interpret deadlines, delays in gratification, and frustration as connected with focus of attention shifts. Ambile, DeJong and Lepper (1976) set deadline conditions on an initially interesting puzzle task. Unobtrusive measures of intrinsic interest indicated that in the absence of external constraints, subjects in the deadline conditions were less interested in the game than subjects in the non-deadline conditions.

Finally, Perry, Bussey and Redman (1977) tested the hypothesis that when reward for an activity is withdrawn, the activity acquires aversive properties through the arousal of anticipatory frustration which causes the decreased interest. In this study, children drew with or without a promise of a reward. Then, during free play, one-half were promised a reward at the end of the free time but not contingent on drawing. This promise of non-contingent reward was expected to prevent previously rewarded subjects from anticipating any frustration. The findings show that the initial promise of reward for drawing, reduced subjects interest in drawing only when children could not anticipate a reward at the conclusion of free play.

It does seem quite clear that external rewards do have effects on intrinsic interest and that focus of attention shifts are most assuredly involved. This is not to suggest more complicated cognitive processes do not take place, but only that the beginning point of the variational cognitions must begin with awareness of the external reward. It is clear from the studies reviewed in this section, that focus of attention on 'self' results in greater attributions to self. Focus of attention on a dissonant situation amplifies derogation of a forbidden object. Further, by successfully dealing with dissonance, children are better able to resist temptation.

However the focus of attention - distraction phenomenon is not distinct. As Sanders and Baron (1975) have pointed out, distraction has differential effects on the performances of easy and difficult tasks. Could the focus of attention here be tied to competence? Could it be that subjects performing an easy task are encouraged by the challenge of distraction and thus perform better in a challenge to prove competence? On the other hand, is a difficult task competence-threatening and with distraction a decrease in performance results due to overload? The literature reviewed here suggests this reasoning is possible.

Deadlines (Ambile et al, 1976), surveillance (Lepper and Greene, 1975), distraction (Sanders and Baron, 1975; Reiss and Sushinsky, 1975, 1976) and delay of gratification (Ross et al, 1976) all fall within the discussion of attention shifts. These shifts of focus away from personal control and the qualities of the activity itself, may produce artificial reasons for performing an activity. Subsequently, and partially due to counter-control, that activity may be de-valued and replaced by other activities free of constraint.

Attribution of Behavior

There has recently been a great deal of literature pub-
lished on the causal perception of behavior. In 1971 the General Lear-
ning Press released a series of articles which addressed attribution of
cause. Kelley concluded an essay on "Attribution in Social Interaction"
by proposing that the perception of cause is intimately linked to the
exercise of control. He said that attribution

> contains within it systematic tendencies and biases such
> that the domain of attempted control is extended, delimited,
> shaped and otherwise affected by the control problems of the
> individual and his social system (Kelley, 1971, pg. 24).

Weiner and colleagues (1971) presented an attributional model
of behavioral cause in which outcome is a function of ability and task
difficulty (stable characteristics), as well as luck and effort (unstable
characteristics) as shown by, outcome = $f(A,E,T,L)$. Paralleling this
model, they offered the idea of a theory of motivation in which the
'facts of consciousness' and the 'facts of behavior' are synthesized
and of equal import as in a united theory of action and thought.

This would suggest that the person's perception of the causal
origin of behavior is a crucial matter. Nisbett and Valins (1971) noted
this point and said that it is possible for a person to overly justify
behavior thereby undercutting attitudes toward an object by over-reward-
ing behavior toward it.

What seems to be clear is that people seek control of their act-
ions and will search their thoughts for appropriate causal attributions.
These attributions will be affected by past history and focus of attention
(Jones and Nisbett, 1971). In their publication they pointed out that actors tend
to attribute causes of their behavior to stimuli inherent in the situ-

ation while observers tend to attribute behavior to stable dispositions of the actor. This is not an unexpected conclusion since the actor's attention is on the setting while the observer's attention is on the actor and his behavior. However, the implications are great as observers over-attribute dispositions of others including the assumption of personality traits which are as a result, merely constructs in the mind of the perceiver.

In more recent work, attempts have been made to identify the variables which must be considered in the processes of attributing variations in behavior. Monson and Snyder (1977) focused on actor-observer differences in two frameworks, (a) availability of information about the contemporary and historical determinants of behavior and (b) susceptability to possible motivational distortions and cognitive biases. In other words, it is clearly recognized that causality is a product of motivational attention and past learning.

Hansen, and Stoner (1978) performed three experiments which dealt further with this question. In the first two experiments the results presented showed that actors attributed their behavior to environmental properties even though their behavior was always discrepant from that of the sample. On the other hand, observers attributed nonnormative behavior to the actors dispositions. And in support of these findings, the third experiment found that the observers attributed behavior of the actor more to stimulus properties and less to the actor's dispositions when the behavior was similar (normative) to that of the sample. Actors attributions were not influenced by the concensus manipulation.

Again, an important point is made clear from this review. The actor, or person, will view his behavior most often as caused, or

at least strongly influenced, by the external environment. The observer on the other hand, will perceive the behavior as an attribute of the person unless it is highly normative. In other words, a person views his interpretations of the environment as the key to action while the observer attributes cause to the person's dispositions.

A different line of research has dealt with achievement related attributions. Kukla (1972) demonstrated that subjects who differ in achievement level also differ in their manner of accounting for the causes of the outcome at a task. The major reasons given were previously mentioned by Kelley (1971), however Kukla showed that high achievers more frequently attribute their success or failures to the degree of effort than do either intermediate or low achievers. On the other hand, intermediate acheivers ascribed outcomes to luck more often than did either of the extreme achievement groups.

With regards to rewards, Deci, Benware and Landy (1974) examined the attribution of motivation as a function of both output and rewards. Two major hypotheses were supported by this experiment which had subject observers judge others, who were paid to work for 50¢ or $2.50 per hour and whether they had produced 25 or 5 pictures. Attribution was described as extrinsic when high rewards were given and similarly less intrinsic motivation was assumed for performers who got high rewards. Also, when rewards were not contingent, attribution of greater intrinsic motivation was assigned to performers who produced greater output and less extrinsic motivation to performers who produce low output.

The most obvious implication of these findings is for applied behavior analysis, that there may be an over-emphasis on the use of external contingencies with resulting dependence. The fact that observers use reward incentive information may emphasize this point or, it may be an artifact

of the study since such a limited amount of information was given to the observers.

Pittman, Cooper and Smith (1977) report a study in which false physiological feedback was given subjects who were performing on a novel task called 'gravitation'. The results of this study support focus of attention and self-perception explanations, since an over-justification effect was produced by contingent rewards which was amplified when information was given that an arousal pattern suggested subjects were interested in the money. But, this effect was insulated when subjects were told their arousal patterns reflected their interest in the game.

To complete this discussion it is of importance to note several points which are crucial to the meanings drawn from experimental data. First of all, Smith (1975), Schultz and co-workers (1975) and Karniol and Ross (1976) have all dealt with multiple sufficient cause (MSC) which refers to the cognitive processes involved in attributing behavioral cause.

Smith's method involved the use of paired stories to examine the age at which more complex causes of behavior are evidenced. One example is as follows:

(1) Jane was at home, and she was deciding whether to watch TV or to play with her coloring book. And she played with her coloring book.

(2) Lucy was at her house, and she was deciding whether to watch TV or to play with her coloring book. Lucy's little sister was asleep, and the noise from the TV might have woken her up. And Lucy played with the coloring book.

Here is one example where the subject would have to attribute the cause of behavior for the story characters. The results reported by Smith show that kindergarten children almost never use the MSC schema,

grade 4 children use a partial schema and only older subjects use a full MSC schema.

A different manipulation is presented by Salancik (1974; 1976). The purpose of these two investigations was to obtain readings of attitudes towards university courses   recently completed. A three page inventory was given which included behavioral questions on the first page, a 'self' or 'external' referent set of questions on page two, and an attitude assessment on page three. Salancik found that the manipulation of the second page had a powerful effect on the information used to derive the attitude presented on page three. The subjects who had been asked about the course in terms of "because I", presented a more intrinsically motivated attitude than did subjects who had been asked on page two about the course in terms of "in order to".

Salancik's work points out how immediate recall will effect an attitude, and since attitudes are expressed by behavior and indeed focus of attention, the extensive use of external rewards may be self-defeating. Control may be perceived in the hands of an external reward when in fact it may be that the only rewards of value are social and competence feelings. But by emphasizing external rewards there is the danger of a focus of attention shift to the material reward and immediately, counter-control is set up.

Self-Perception

Social learning theory (Bandura, 1971) is intimately related to self-perception theory (Bem, 1972). The basic premise of the former is that,

> Man is neither driven by inner forces nor buffeted
> helplessly by environmental influences. Rather, psychol-
> ogical functioning is best understood in terms of a con-
> tinuous reciprocal interaction between behavior and its
> controlling conditions (Bandura, 1971, pg. 2).

Emphasized are vicarious, symbolic and self-regulatory processes and that man learns by observation and by the use of a superior cognitive capacity in which people can represent external influences symbolically and later use them to guide action. Hence man has the abilities of insight and foresight.

Self-perception theory is described as a process whereby people get to know their own

> attitudes, emotions and other internal states partially by inferring them from observations of their own overt behavior and/or the circumstances in which this behavior occurs. Thus, to the extent that internal cues are weak, ambiguous, or uninterpretable, the individual is functionally in the same position as an outside observer, or observer who must rely on the same external cues to infer the individual's inner states (Bem, 1972, pg. 2).

As basis of this theory Bem cited the philosophers Chappell (1962) and Ryle (1949) who proposed that the reason we know we are hungry is because it has been learned. It seems, of course, a necessary condition for physical survival to recognize when we are hungry and should eat. In other words, we are taught to describe internal states. Bem also made mention of Skinner (1953) and the fact that Skinner emphasized that we do not have knowledge until trained. In support of this reasoning, Bem reported a cartoon experiment in which green and amber lights signify 'truths' and 'lies' and the fact that the individual can be influenced by these stimuli to infer beliefs. He also described a false confession experiment where it was shown that a false confession can distort an individual's recall of past behavior.

The important similarity of these two theories, for the present discussion, is that Bandura suggests man is not 'helplessly buffeted' by environmental influences (in effect, external contingencies), but has a superior cognitive capacity most notable in observational learning.

Bem, in reference to observational learning, suggests that man observes himself, especially when external cues are weak or ambiguous, in order to formulate attitudes.

An interesting paper by Wicklund and Duval (1971), which was mentioned briefly in an earlier section, reports on experiments performed on the topic of objective self-awareness. These experiments were designed to demonstrate that objective self-awareness, a state in which the individual evaluates himself and attempts to attain correctness and consistency in his beliefs and behaviors, can mediate both opinion change and performance facilitation. One experiment which involved counter-attitudinal essay writing in front of a television camera resulted in greater attitude change as compared to a control group. Another experiment attempted to demonstrate that performance facilitation effects can be produced through self-evaluation. Approximately one-half of the subjects faced a mirror which would expectedly effect self-evaluation with respect to performance rate. The results supported this hypothesis as performance was better by the subjects who faced the mirror.

The implications here apply directly to the intrinsic-extrinsic motivation debate. When a person sees himself engaged in some behavior he will ask why, and will attribute the cause to the most salient contingencies. If external reward is high the reason for behavior may be assumed for reward and thus focus will be taken away from the activity itself. When external contingencies are absent, the individual will be forced to focus attention on the activity and the stimulation this activity is providing. It further suggests that we may impair performance and subvert interest by not fostering the development of self-motivation.

Focus of attention is a key concern for psychologists. The

evidence on objective self-awareness and observational learning clearly emphasizes this point and hints at the processes by which the human prepares for action. While it is the individual who must in the end construct an attitude, the environment provides the setting and the information which will provide the stimulus for cognition. The attitudes the individual brings to the situation will driectly influence the focus of attention and subsequently the derived meaning.

In conclusion, it seems natural to finish this review with a statement by Kleinke who wrote on self-perception and the psychology of personal awareness. He stated,

> When people become less aware of external forces influencing their behaviors, they are more likely to interpret their actions as a product of intrinsic motivation (Kleinke, 1978, pg. 139).

3. Content Related to Physical Activity

Focus of Control

It has been suggested that there is a need to control one's environment as "an intrinsic necessity of life" (Adler, 1930, pg. 398). Brehm stated that a person is motivated to feel that he can do what he wants,

> that he does not have to do what he doesn't want and that, at least in regard to the freedom in question, he is the sole determinant of his own behavior (Brehm, 1966, pg. 18).

These statements are based on experimental findings. Stotland and Blumenthal (1964) found that allowing students to choose the order in which they took a series of important ability tests resulted in less anxiety during the test taking than when subjects were given the same tests in an assigned order.

Geer, Davison and Gatchel (1970) reported that when subjects perceive that they can select the time, onset, duration, or termination

of an aversive stimulus such as electric shock, they will tolerate the aversive stimulation for a longer period of time. These findings were similar to those presented by Corrah and Boffa (1970) who used a loud noise as the aversive stimulation.

Since 1971 a great deal of attention has been paid to the controlling aspects of behavior. Research continues to be conducted on this topic, however a more recent concern has been the analysis of 'peak performances' in sport. Kane has written,

> For some elite athletes and for unaccountable reasons, individuals have experienced a fusing of the body-mind link that has given rise to a gigantic release of bodily energy, a sort of unleashing or disinhibiting mechanism, resulting in an outstanding performance almost impossible to analyze and replicate.... The measurement and assessment of such 'peak' experiences touching on the imagination, the trans-cendental and the intrinsic states of being, constitute an almost insuperable problem. Joy, delight, fulfillment and ecstacy are indeed hard to record, but their existence is undoubted. They are part of the complex but important sys-tem of intrinsic motivation and deserve the serious atten-tion of psychologists (Kane, 1978, pgs. 237-238).

There may be a connection between peak performances and con-trol as the athlete in a peak performance may give up thoughts of the external environment. By doing so, personal control is assumed and com-plete concentration or expression through the sport medium may be the product. Csikszentmihalyi (1975, pg. 56) may deal with this possibility in his 'flow' model of play and creativity (see Figure 1).
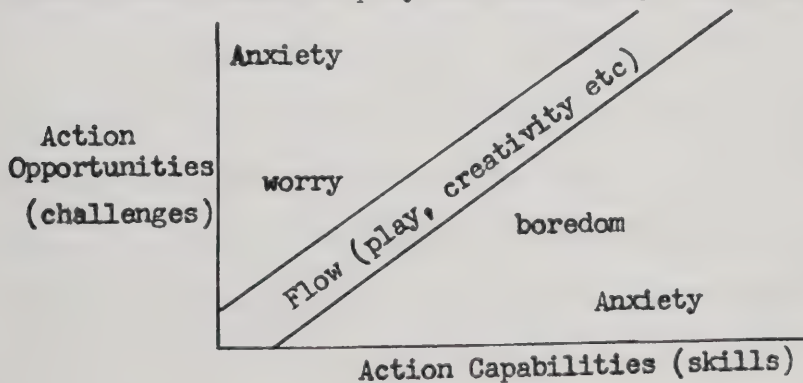
Figure 1. Model of the Flow State (Csikszentmihalyi, 1975).

On either side of the flow state, attention is focused on the external environment. On one side there may be feelings of inadequacy because the situation is too powerful, the opposition is too good, while on the other side the situation is weak and both control the opportunities to experience 'Flow'.

The control factor is certainly important as the illusion of control clearly results in differential behavior. Langer (1975) found in two separate studies that giving individuals a choice of lottery tickets led to greater commitment to those tickets. Subjects who were allowed to choose their tickets were more reluctant to part with them than those subjects who were assigned their tickets, even though each had the same objective chance in the lottery.

The implications are far-reaching with regard to punishment and problem-solving. Fosio and Geer (1971) found that subjects who received problems which were unsolvable and were subsequently shocked for incorrect answers, made more mistakes when presented with problems that were solvable than did a group which had some success previous to this second set of problems. The suggestion that these experimental subjects had lost control of the situation is not an unreasonable interpretation. Undoubtedly, greater attention was placed on the environment (punishment) than would normally be.

A different line of research has looked at the effects of perceived activity choice in relationship to attendance at exercise programs. Thompson and Wankel (1978) were faced with the question of how to get people to maintain regularity in fitness programs. It was clear from earlier work that personal responsibility was important for consequences reported as a self-persuasion effect (Collins and Hoyt, 1972). Janis and Mann (1972) made use of a balance-sheet procedure to improve the

quality of personal decision making. That balance-sheet included a grid with various categories such as (a) utilitarian gains or losses to self, (b) gains or losses to significant other, (c) approval or disapproval of significant others, (d) self-approval or disapproval and (e) others. As used in a study which examined ladies in a fitness program, it was shown that there was greater attendance over a seven-week period by subjects who completed the balance-sheet compared to subjects who completed an irrelevant balance-sheet treatment pertaining to the decision to quit smoking (Hoyt and Janis, 1975).

Based on earlier work in which the balance-sheet used was generalized to a drop-in exercise program, Wankel and Thompson (1977) found that a positive consideration only was just as effective as the full decision balance-sheet treatment. Interpreted as evidence for a self-persuasion interpretation, they measured locus of control (Rotter, 1972) and health locus of control (Wallston et al, 1976) and found no initial differences in the subject groups. Then the experimenters had all subjects rate the type of activities that 'might' be used in the exercise program. However, the subjects were told on their second visit either that their program was based totally on the choices they had made or, that there was no choice since the instructresses had decided to use a program based on a standardized exercise format. Actually, the two exercise programs were identical. As a result, the 'choice' experimental group perceived greater input and, their attendance rate was higher.

The perception of choice seems to be a key factor in the involvement to which a person commits himself. Mannell (1978) reported that subjects having no choice estimated significantly longer activity involvement for a standard time period than high choice subjects. Significant effects for competitiveness and choice demonstrated that aware-

ness of the immediate environment decreased as a function of greater competitiveness and choice in the activity. These findings again suggest that lack of control in decision making may inhibit the experiences that a person becomes involved with. Greater freedom of control and greater choice, provides the opportunity to personally commit oneself to the activity.

Locus of control literature is also of importance to this discussion. Ritchie and Phares (1969) said that self-perceived 'internals' are more resistant to influence attempts. Biondo and McDonald (1971) equally demonstrated that self-perceived 'externals' were more susceptable to attitude change under persuasion attempts. They suggested that 'internals' were negatively influenced or showed reactance to strong attempts to influence. Alegre and Murray (1974) showed that 'externals' accept social reinforcements whereas internals resist social reinforcement attempts while Cravens and Werchel (1977) showed that internals and externals respond differently to leadership demands.

The fact that people perceive the locus of control differently is well known, however the internal-external locus of control variable has only recently been combined with choice manipulations. One important study which did combine these two factors is by Backman and Mannell (1978). The authors pointed out that two factors, perceived freedom of choice and the individual's generalized belief concerning his potential for control of the environment may have a great impact on perceived freedom and leisure. Leisure was defined as,

> a transient cognitive state, easily interrupted and characterized by loss of awareness of time and surroundings, accompanied by positive affect (Mannell, 1978, pg. 4).

Pointing out the fact that while freedom of choice is not necessary, perceived freedom is, Backman and Mannell measured locus of con-

trol and divided the subjects into two groups to produce a 2 x 2 fact-
orial design. That is, they had groups of internals and externals in
both high choice and low choice conditions. The results showed that
internal subjects experiencing high versus low choice demonstrated
greater situational awareness through the use of a multiple choice
questionnaire. No difference in awareness due to choice was found for
externals. This trend, which was opposite the prediction, was supported
by an interaction effect for activity ratings of boringness.

Finally, there was a significant interaction effect found
using the mood adjective check list (Nowlis, 1965) for ratings of bor-
ingness on a manipulation task. Externals in low choice found the task
more boring than externals with high choice in relationship to internals
with low choice who found the task less boring than internals in high
choice. The difference between internals high and internals low choice
was significantly different. The authors, in an attempt to explain the
findings did post-experimental interviews and found that the low choice
internals, for some reason, indicated a greater willingness to come back
and play with the game. Since the findings did not fit the hypothesis,
the authors then stated that cognitive dispositions such as locus of
control and likely,

> a variety of other factors moderate the degree to which an
> increase in the number of alternatives in one's environment
> contributes to satisfaction and potential leisure experiences
> (Backman and Mannell, 1978, pg. 17).

The point which is most clear however is that there are individual diff-
erences, expressed in part by perceived locus of control, and these
differences suggest differences in awareness, attention and perception.

Sport

Fisher (1977a) has pointed out several criticisms

of personality study which brought about his conclusion that the trait

approach is inadequate and that it will likely have to be dropped. He

further said (1977b) that stimulus must be removed as the main fac-

tor in motivation with attention being shifted to desires, wants, am-

bitions, cravings and aspirations. He reviewed achievement motivation,

attribution theory, stimulus binding theory, cognitive social learning

theory, locus of control and field dependence-independence and present

them as alternative modes of enquiry to personality study.

Wankel (1975) agreed that drive theory and trait theory, which

are both mechanistic orientations, have dominated research in sport psych-

ology and more importance should be placed on cognitions. His paper re-

viewed attribution theory as a means to better understand behavior.

It is interesting to note the reference to mechanistic app-

roaches which brings to mind the earlier discussion of humanistic and

mechanistic approaches. Anshel dealt with this very question and states,

> The perfection of physical tasks is recognized as a
> significant component of team victory (a behavioristic ob-
> jective). However, it is contended that the role of sport
> participation in our society goes beyond, but does not nec-
> essarily exclude, the goal of winning. The humanistic app-
> roach in coaching emphasizes those aspects of team sport
> leadership which recognize the importance of a positive and
> meaningful competitive experience for the athlete. It is
> suggested that the coach who is sensitive and interacts with
> each athlete will positively influence individual and team
> performance (Anshel, 1978, pg. 83).

It is further pointed out that the two philosophies see teams of players

differently. Behaviorism is perhaps more prone to promote the view

of a team of basketball players for example, while the humanist stance

promotes the view of a group of individuals who play basketball.

While this need not be the case (the behaviorist need not be

subject to impersonality and mechanization) there is the contin-

ual threat beside the behaviorist which is eliminated by seeing sports-

men as individual expressions of mankind.

Why has research come to this point? At least part of the answer lies within the realm of competition. Orlick (1974) equated physical activity with play and suggested a process by which coaches and administrators have taken play out of sport making involvement dependent upon external rewards.

Gerson (1977) called for a complete re-designing of athletic competition for children. There is reported disenchantment with sports by many children and Gerson suggested two reasons why, both of which must be reckoned with, (a) the object of beating a rival independent of his advancement of ability and, (b) self-concept decreases as a result of failure. The suggestion given greater emphasis on a subjective rather than an objective competitive situation.

There may be good reason for this suggestion. Fisher and Driscoll (1975) said that people tend to repeat those experiences that are perceived as pleasant and in which they find success. And yet, in sport competition today we realize there are only a few who experience a great deal of success. Most often the way sport is perceived by the athlete is that there is only one winner of the final race.

As evidence of this fact and in reference to attribution theory, two studies have recently been reported on Little League baseball players. In the first (Roberts, 1975) note was made of the self-serving hypothesis, to promote a greater positive view of self. In that study it was reported that consistent failure lead players to invoke external and unstable attributes to explain future success. On the other hand, success experiences lead to high achievement behavior in that players felt they had the ability, and do, try hard.

The second study (Iso-Ahola, 1975) examined several hypotheses.

The only significant finding was that high success and high failure were internally attributed to ability and effort, whereas bare-win and bare-loss were externally attributed to task and luck.

Certainly those in the sports area must be concerned with these findings. Since the physical health of a community may be affected by the continuance of participation in physical activity, alternate forms of sport organization must be reviewed as alternatives to the heavily emphasized competitive programs we have today in North America. While a replacement is not suggested, there are very likely alterations such as promoting a different perception of success and failure.

With the amount of emphasis there has been on intrinsic motivation in the past few years, Siedentop and Ramey (1977) reviewed the argument that token economies can increase interest while cognitive psychology has shown that external rewards decrease intrinsic motivation. From the view of behaviorism, these authors reviewed attribution and competing response theories and suggested that indeed sports personnel must be alerted to the potential harm of external rewards. But, they urged that we must not over-react because while there might be some good reasons to question such practices, they do not derive from research on intrinsic-extrinsic rewards. In their paper, emphasis was placed on the information versus controlling values of rewards and that we must be aware of the two meanings when awards are used.

Gerson (1978) disagreed however, as it is stated that an overemphasis on rewards in children's athletic programs has undermined intrinsic motivation. Gerson referred to overjustification, competing response and adding-discounting theories to explain decreased play effects. Emphasized was the value of evaluative appraisal since children view effort as key and rewards may be seen as bribes. That paper concluded that

non-contingent rewards should not be used.

Most recently, Deci (1978) has reemphasized that psychologists are recognizing that there is a type of motivation which is centrally important for human functioning. Intrinsic motivation which is key to human functioning, is said to be based in people's need to be competent and self-determining in relationship to the environment. Deci's view of competition is that it may be viewed both as controlling as well as informational. In support of these statements he reported a study in which a confederate competed with subjects, the subject won the first game on a soma puzzle task while the confederate won the second. Then, the subject won the remaining three games.

This particular experiment utilized a 2 x 2 x 2 design in which sex was crossed with competition and these were crossed with the presence or absence of monetary rewards. The results showed that those subjects who were instructed to compete displayed significantly less intrinsic motivation during a free choice period than did subjects who did the same thing without being told to compete. Further, this difference was very large for females. Also, males told to compete for money were more intrinsically motivated than males told to compete without the additional reward. For females, the opposite was true.

Deci closed the paper by stating that it is too early to draw definitive conclusions from this. He did state however that it might be,

> better to focus people's attention on competing to better
> understand themselves rather than competing to beat others.
> The more 'self-oriented' the approach, the more likely people
> will be intrinsically involved with the activity. Such an
> orientation would focus on the person's interaction with the
> activity rather than on the person trying to beat someone
> else (Deci, 1978).

A final paper of note is that by Rotella (1978). In discussing achievement motivation and attribution theory relative to sport per-

formance, he offered a planned program structured to cause changes in achievement motivation levels as well as in the attributional framework of athletes. The five phase system includes; (a) having athletes tested on achievement motivation, (b) providing information relevent to achievement motivation, goal setting and causal attribution, (c) helping set realistic goals, (d) drawing up a list of needed skills, and (e) encouraging and reinforcing increases in effort.

Here is pointed out the present point of research in sport performance with regard to motivational considerations. There is the intrinsic-extrinsic motivation question and there is the achievement motivation question. There is the behavioristic stance which is partially reflected in Rotella's (1978) five phase program to increase performance, and there is the humanistic stance which implies the need to emphasize more than objective performance. The issues are clear but two major approaches are involved and there is a need to draw the various approaches to the motives of man into one camp.

Summary

There are several key points raised in the review of research related to the effects of extrinsic rewards on intrinsic motivation. Apart from the fact that the meaning of intrinsic motivation remains obscure within the literature, the following points have been made:

(a) People search for behavioral cause within the environment and within themselves. When salient external contingencies are brought to attention, causation is most often attributed to extrinsic reasons.

(b) There is evidence that focus on external contingencies can disrupt participation in an intrinsically interesting activity.

(c) The illusion of control of behavior seems to support in-

trinsic interest while perceived loss of control can undermine intrinsic interest.

(d) Following from points (b) and (c), there is a strong suggestion that external rewards may have a counter-controlling effect as reflected in the cognitive evaluation theory.

(e) Focus of attention shifts on dissonance producing situations seem to amplify the amount of dissonance. Equally, focus of attention on external rewards may amplify the need for them, even as focus of attention on oneself or the task may promote greater attention to performance.

(f) The concept of personal control is reflected in theories which deal with balance such as dissonance theory, equity theory and flow theory. Man seems to desire a state of stimulation within self-determined boundaries beyond which may lie worry and anxiety on one extreme and boredom and anxiety on the other. It is possible that over-emphasis on external contingencies as well as deprivation of such rewards has the same effect.

(g) There seems to be a need to examine focus of motivation of various athletes within this context, and in relationship to sport competence.

4. Focus of Motivation

The phrase 'focus of motivation' has been chosen for several important reasons. First, while not wanting to unnecessarily add another dimension to the already substantial motivation terminology (incentive, achievement, intrinsic, extrinsic), it is suggested that insight may be gained by examining the principle or primary center of motivation rather than considering straight line continua. Second,

it is an extremely difficult problem to separate intrinsic and extrinsic
motivation without refering to primary focus since all incentives, be
they seemingly intrinsic or extrinsic, are perceived by the individual,
and   valued by the individual and   hence   are in that sense in-
trinsic. On the other hand, it would seem that most, if not all, be-
havior is spurred by stimuli in the environment so in that sense, all
motivation would be extrinsically based. Therefore, the primary focus
of motivation is prefered although discussion will include the use of
the terms, intrinsic, extrinsic, achievement and incentive as they have
been previously defined. Third, the very term focus implies the likeli-
hood of a balance point beyond which too much weight may result in un-
balanced psychological functioning resulting in negative affect.

The Influence of Values

Bronowski (1956) wrote on science and human values
and brought to attention several very important points. In discussing
the creative mind, he related art and science since they both reflect
the practical issues of the day.   Newton turned naturally to astronomy
because it was the subject of his day and da Vinci painted the world he saw.
Bronowski   emphasized that great scientists such as Newton, Faraday
and N. Weiner were never in a scramble for patents but that their work
was a compound of two interests, the interest of the time and, the
scientist's own interest.

In addition, Bronowski emphasized that man masters nature not
by force but by understanding as the great discoveries which are made,
are a result of finding unity or order in hidden likenesses. In his
words,

> The discoveries of science, the works of art are ex-
> plorations - more, are explosions, of a hidden likeness.
> The discoverer or the artist presents in them two aspects
> of nature and fuses them into one (Bronowski, 1956, pg. 19).

Human knowledge then advances by way of making and adjusting concepts all within the habit of simple truth to experience.

Another and most important point to which Bronowski addressed himself was the concept of value. The difficulty in these concepts are that they do two things at once, "They join men into societies and yet they preserve for them a freedom which makes them single men" (1956, pg. 55). The human being is then balanced within a system which is based on laws and rules of conduct and yet which allows the individual to ask himself how he ought to act. In our present society values are a key issue since we are provided with the freedom to decide where our focus of motivation will lie. For the scientist it is pointed out that principle values are several including independence of observation and of thought, originality and therefore dissent, but coupled with respect.

Clearly, no mention has been made of materialistic values. In fact one can confidently say that the primary values of the more esteemed scientists were other-worldly, were focused on a search for truth or greater understanding of the environment and in that sense were away from the 'self'. In addition, the need to explore has been demonstrated as a quality of many forms of animal life with the emphasis on man.

> The values by which we are to survive are not rules for just and unjust conduct, but are those deeper illuminations in whose light, justice and injustice, good and evil, means and ends are seen in fearful sharpness of outline (Bronowski, 1956, pg. 73).

With this in mind, there becomes a clear distinction between individual values on the intrinsic-extrinsic continuum. Intrinsic, refers to values inherent in the activity itself and extrinsic means the rewards such as pay or prestige which are the result of work which implies different foci. In the former case the focus of motivation is on the task, there is a value placed and attention placed on doing the task.

The latter case shifts the focus to contingencies which associated with the task, to the extrinsic rewards which in fact can detract attention from the activity and thus impair the quality of performance.

In the sport situation, this is equated to attention on the physical activity, on understanding the activity as opposed to attention on the outcome and expected rewards or possible failures. Only in the former situation, with full attention on the task may there be discovery through increased understanding of the sport. Discovery can take the form of new plays in football, new strategies for wrestling and tennis or variational tactics in any sport. Examples of such discoveries are the 'flop' in the high jump, the 'spin' in the shot put and the 'wishbone' formation in football. All are in a sense scientific discoveries which are a product of attention focused on the task.

The discussion on values is more important than the intrinsic-extrinsic discussion would imply. Because behavior is particularly dependent upon the individual's perception of the particular situation, and because perception is influenced by personal values, it becomes necessary that values be discussed in order to better understand behavior.

Allport (1954, pgs. 19-21), in his work on prejudice and values pointed out that the human mind must think with the aid of categories or generalizations. He wrote that there are five important characteristics of this process of categorization which are;

(a) It forms large classes and clusters for guiding our daily adjustments, ie. we perceive situations and behave on the probability that a certain action is appropriate.

(b) Categorization assimilates as much as it can to the cluster.

(c) The category enables us quickly to identify a related object.

(d) The category satiates all that it contains with the same ideational

and emotional flavor.

(e) Categories may be more or less rational.

Allport went on to say that when categories conflict with evidence or experience, there is a stubborn resistance to change. In fact, it seems that often, there is only a selective admittance of new information, that information which confirms our previous beliefs.

Allport further wrote that value categories are most impor- tant to the individual. He lives by and for his values. In fact, so important are the value categories that evidence and reason are ordin- arily forced to conform to them. This is what psychologists call parti- san thinking, that we regularly avoid 'directed thinking' or objective thinking and in fact we may continuously deceive ourselves.

The Influence of Beliefs

When we talk about beliefs we indirectly refer to the individual. While a total society may believe that the earth is flat, a society is made up of individuals who believe the earth is flat which suggests that majority beliefs are not necessarily true. It would not matter if the total population of mankind believed the earth to be flat since the fact is, the earth is not flat. Belief then does not have an effect on physical geography, but belief will surely affect the behavior of the individual. That is, those who once thought the earth to be flat avoided sailing too far out onto the ocean for fear of falling off. Had they been aware the earth was not flat and thus believed it to be round, their behavior would most likely have changed and they would have ventured farther out to sea.

Hamachek (1971) said that people tend to behave in a manner which is consistent with what they believe to be true.

In this sense, seeing is not only believing; seeing
is behaving! A fact is not what is; a fact is what one
believes to be true"...for example man..."believed that
bloodletting would drain out the evil spirits and cure a
patient and persisted in this practice despite the fact
that people died before his very eyes. When man believed
that phrenology could help him, he had his head examined
(literally) (Hamachek, 1971, pg. 38).

As evidence of this phenomenon are several studies. As prev-

iously described in the introduction to this paper, Kelley (1950) gave

students a brief description of a guest lecturer but without their

knowing it, one-half of the group received the phrase, is a very 'cold'

person and one-half of the group received the phrase, is a very 'warm'

person. These phrases were mixed in with other information about the

lecturer.

The results of rating this lecturer were most enlightening.

Those who received the very 'warm' description rated the visiting spea-

ker as more considerate of others, more sociable, more popular, better

natured, more humorous and more humane.

Further evidence of the effects of beliefs on learning is

provided by Bills and McGehee (1955). They found that students who

learned and retained the most in a psychology experiment were inclined

to believe things such as "psychology experiments are useful and will

eventually help us to completely understand people" and "Psychology,

in general, is a valuable, quantitative science with many practical

aspects". On the other hand the students who held the beliefs that

"Psychological experiments are a total waste of time", quickly forgot

the material.

There is little doubt that our beliefs influence our percep-

tions and nurture our assumptions. Therefore, our beliefs, as do our

values, to a large extent determine our behavior. The eminent philo-

sopher Bertrand Russell focused attention on this issue when he wrote "every man is encompassed by a cloud of comforting convictions that move with him like flies on a summer day" (Russell, 1928).

It is this topic of belief, that refers us to the 'self' or that relatively recent construct which has come to occupy the attention of much research. While the self is most often refered to as that part of each of us of which we are consciously aware, that may be misleading to some extent. Jersild (1952) stated that,

> A person's self is the sum total of all he can call his. The self includes, among other things, a system of ideas, attitudes, values, and commitments. The self is a person's total subjective environment; it is the distinctive center of experience and significance (pg. 9).

More recently, attempts have been made to disect the 'self' as for example the approach presented by Middlebrook (1974). In that breakdown there are five selves, (1) the material self, (2) the psychological self, (3) the self as a thinking emotional process, (4) the ideal self, and (5) the social self. The point of this discussion for the present paper however lies in the contention that the individual's self-perception is made up of various values and beliefs. These elements are the building blocks of behavior and must be taken into account before the understanding of behavior can become clear.

It must be pointed out that even as Pascal (1965)[1] wrote on self-deception, today the mechanisms of self-defense have been itemized. Most often the self-defense mechanisms are employed in the presence of counter-factual argument. These mechanisms as reviewed by Hamachek (1971) are:

(a) Denial of reality - we ignore or disclaim criticism.

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[1] The dates for Pascal are 1620-1662.

(b) Fantasy — we remove ourselves temporarily from unpleasant reality.

(c) Compensation — we attempt to disguise the existence of a weak or undesirable characteristic by emphasizing a more positive one.

(d) Introjection (internalization) — we internalize the values of authoritative figures such as parents.

(e) Projection — we regulate the blame for our own shortcomings and mistakes and we attribute to others our own unacceptable impulses, thoughts and desires.

(f) Rationalization — we invent excuses for doing what we don't think we should do but want to do and it aids us in softening the disappointment connected to not reaching a goal we had set for ourselves.

(g) Repression — we exclude painful or dangerous thoughts or desires from consciousness.

(h) Reaction formation — we develop conscious attitudes and behavior patterns which are opposite to what one really feels and would like to do.

(i) Emotional insulation — we attempt to reduce needs and fears by withdrawing into a sort of shell of passivity.

(j) Regression — we retreat to behaviors appropriate at earlier levels of development.

(k) Sublimation — we accept a socially approved substitute goal for a drive whose normal channel of expression is blocked.

This incredible list of defense mechanisms, brings to our attention the state in which mankind exists. The number of false beliefs we have is likely to be considerable and change is likely to be very slow considering the already highlighted evidence on resistance to change in human nature. However the outlook is not as bleak as that presented by personality theory which implies considerable stability.

Self-perception theory recognizes that perceptions once acquired are difficult to change but further suggests that perceptions towards one's self and others can be modified.

Coopersmith (1967) has done considerable research on the concept of self-esteem which is considered one of the most important ingredients of the total self-concept. He said that self-esteem is the evaluation which an individual makes and customarily maintains about himself, it expresses an attitude of approval or disapproval. This view of self-esteem equates with that presented by Rosenberg (1965) who emphasized that high-esteem is reflected in feelings of self-worth, that one is equal to others but not superior to others.

Research on self-esteem has been extensive as comparisons have been made in various areas such as academics and IQ, family background and parental practices, anxiety, concern with public affairs, occupational orientation, and more.

With regards to values and self-esteem, it was William James (1890) who pointed out that aspirations and values have an essential role in determining whether we regard ourselves favorably. Our achievements are measured against our aspirations and when achievement approaches or meets our aspirations in a valued area, the result is high self-esteem. If there is a wide divergence however, between aspirations and achievement, we will regard ourselves poorly and this is equated to low self-esteem.

It is not surprising then to note that individuals differ in the importance they attribute to successes. Further, these difference are largely a function of the values that have been internalized from parents and significant others. In this vein it would seem that everyone is capable of high self-esteem since all one need do is value that at which one is

proficient. In fact, we would expect individuals to place less emphasis on those activities at which they are less proficient.

Carrying this further, Rosenberg (1965) indicated that it is the combination of salient self-value and estimates of satisfying that value, that is associated with the various levels of subjective self-esteem. The relationship of interest in the present study, lies within the realm of possible differences between self-esteem and subsequent anxiety with focus of motivation based on intrinsic as opposed to extrinsic motivation. Buss (1973) summarized research on self-esteem with the following points:

(a) The core of self-esteem is established by middle childhood and it is rooted in part in unconditional love from the individual's parents. An independent person needs less external attention because he has acquired a residual core of self-love and respect. The other part of this core has to do with a constitutional element which is determined by early parent-child interactions. The more independent individual needs slightly less in the way of company and subsequent social rewards.

(b) A periphery surrounds the core of self-esteem and it too is made up of two parts, affection and accomplishments. It has been reported that the main avenue for male self-esteem is through achievement and competition while for females the main avenue is through affectional relationships.

(c) The characteristics of subjects who are high in self-esteem are several. They generally achieve higher grades in school, do better on IQ tests and have higher aspirations. It must be pointed out further that both high and low self-esteem subjects evaluated themselves against a common set of criteria including academic achievement, athletics, friendliness, attractiveness, intelligence and independence.

(d) High self-esteem individuals generally come from the upper middle class, the fathers have better work histories and the parents are more stable. Further, in the families of high-esteem subjects, there is reported more love, parents are less permissive but punishments are more just and less harsh.

Coupling self-esteem with levels of faith in others is of particular interest since there is a question which was originally raised by Freud and argued by E. Fromm. Freud (1915) believed that the more a person loved himself, high self-love or self-esteem, the less that person would love others. Freud's formulation was one of economics. He implied that the energy available, the libido, was limited and the more love was directed toward the self, the less there would be available for others.

Fromm (1947) took the opposite view based on the belief that the basic attitude an individual has towards society will be reflected in oneself. That is, if a person trusts and respects human nature, then he will trust and respect himself since he himself is a member of the human race.

Therefore Rosenberg (1965) reported on the correlations between self-esteem and faith in others. The results seem quite clear that as self-esteem decreases so does faith in others, a finding which is support for Fromm's reasoning.

Again, it must be re-emphasized that we are discussing beliefs rather than facts per se. We have dealt with beliefs of self-worth and we have dealt with beliefs in the trustworthiness in others. Both of these factors are considered to be very influential in determining aware-ness, perception and subsequently, behavior.

A final factor which is noteworthy and has to do with beliefs

or perceptions of reinforcement control. The concept of internality-externality has been popularized by Rotter (1966) and is a concept which is a product of social learning theory. Basically, acquisition and performance differ in situations perceived as differentially determined by skill or by chance. Individuals may then differ in generalized expectancies for internal versus external control of reinforcement.

People differ in this generalized expectancy in a fashion that internals perceive (believe) that they are the origins[2] of their behavior and externals believe that they are more or less buffeted about by fate. Phares (1976), in discussing locus of control deals with the concept in the framework of motivation. He pointed out,

> Groups of people are observed to differ in their performance of certain behaviors. Because they also differ in what are regarded as expectancies for personal efficacy or control, it is often assumed that these expectancies account for the bulk of the variance. However, what about the potential differences in reinforcement value? Maybe internals try harder than externals due to differences in the value they ascribe to certain outcomes. Is it not possible, then, that there are associated motivational differences between internals and externals   (1976, pg. 71)?

As evidence in support of this reasoning are several studies. Rotter and Mulry (1965) reasoned that if subjects regard outcomes as very important (more valued), they will take longer in the decision making process. Phares (1976) offered that social learning theory research has shown this to be the case.

Rotter and Mulry (1965) used a difficult perceptual task and instructed half of the subjects that correct matching was a matter of luck. The remaining subjects were given skill instructions. The results were as hypothesized; internals took longer under the skill instructions and externals under the chance instructions.

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[2] DeCharms, R. in this book Personal Causation (1968) referred to 'origins' and 'pawns' and the meaning is not far removed from 'internals' & 'externals'.

Pursuing this question, Phares and Wilson (1971) found that internals showed greater evidence of attraction to an internally oriented stranger than they did to an externally oriented stranger. And, contrary to what was expected, externals did not show a greater attraction toward an external stranger. It is noted further that in both of these studies, (Rotter & Mulry, 1965; Phares & Wilson, 1971) the major proportion of the difference was due to the internals.

While it is recognized that these results do not prove the existence of a motivational component of locus of control, they are not inconsistent with such a notion. Dealing with the motivational dimensions of locus of control, Julian and Katz (1968) hypothesized that internals value self-determined rewards more than externals under skill conditions while the converse is true for externals under chance determined conditions. The experimental setting involved competing with partners to earn points. The results presented included a statement that internals did indeed prefer to rely upon themselves more than did externals even when their opponents were seen as more competent. In discussing the experimental work the possibility was brought out that expressed preference for internal control implies a need or desire to predict and control outcomes and rely upon oneself, which is clearly reflective of the previously discussed balanced psychological functioning.

Finally, there is a link between locus of control and both anxiety and self-esteem. Phares (1976, pg. 121) reviewed the studies relating anxiety with locus of control and there is reported a positive correlation between externality and anxiety. For example, Watson (1967) as well as Ray and Katahn (1968) obtained positive correlations r= .36 and r= .30 respectively between scores on the Taylor Manifest Anxiety scale

and externality.

With regard to self-esteem, Fitch (1970) has reported a low but significant positive rank-order correlation between locus of control and self-esteem such that low self-esteem subjects tended to score as externals.

The literature which involves beliefs and values relative to self-esteem, locus of control and anxiety suggests a common underlying factor. Therefore there is a need to examine relationships amongst these variables within the sport framework with attention to the possibility of a more or less ideal focus of motivation for progressive sport participation.

Personal Orientation

It has become quite apparent that individuals differ in their perception of themselves, as well as other people and reinforcement control. In other words, people differ in their situational preference. These differences have been examined by Bass (1977) who has produced an orientation inventory which attempts to identify the kinds of satisfactions and rewards which are sought in work. He wrote that,

> Often mutually exclusive are three kinds of satisfaction: getting the job done, having a happy time with others, or gaining some self-satisfying ends (1977; pg. 3).

As such, he labels three types of personal orientation as task, interaction and self-orientation respectively.

The orientation inventory (ORI) is a psychological assessment tool which searches out individual values. These values are assumed to be closely linked with behavior. In an interesting comparison, Bass (1977) examined sixty-four graduate students and the type of car which each of them drove. Not surprising is the result that self-oriented

students were owners of the more expensive and more prestigeful Buicks and Pontiacs. On the other hand, the interaction-oriented students owned significantly more compact cars such as volkswagons which Bass interpreted as reflecting greater affiliation awareness since big and flashy cars often look out of place in the university parking lot.

Of a different nature Bass found that subjects high in task-orientation scores, were more likely to complete an assignment when free to quit. Also, they met failure to succeed at jobs with less defensiveness. In one study (Bass, 1977) sixty-eight Louisiana State University elementary psychology students, who were classified as task-oriented, were found to be more likely than others to complete a ten minute scrambled words problem when after five minutes they were told they could quit the activity.

In a similar experiment Frye & Spruill (1965) gave sixty-two fourth grade pupils the children's version of the ORI. These children were told they could either turn in their papers and go out to play when the recess bell rang or stay behind to check or re-do their work. It was found that children with high task scores were more likely to remain behind.

With regards to defense mechanisms of the self, Bass and Dunteman (1964) examined the hypothesis that if failure is ego-threatening, it should result in a significantly greater emission of defensive reactions by self and interaction-oriented subjects. Therefore, three groups of eight secretaries, categorized according to the three ORI scales, were confronted by fictitious training staff reports which indicated that the secretaries were unintelligent, unable to get along with others, and lacking in a desire to learn. As was predicted, both the self and

interaction oriented secretaries checked from two to three times as many statements indicating strong defensive emotional reactions than did the eight task-oriented secretaries.

In the lengthy orientation and occupation review presented by Bass (1977) two physical activity groups were studied. English football personnel were examined and football players were found to be relatively high in self-orientation compared to trainers, coaches and managers who were in turn higher on task-orientation. Also, seventeen mount Everest climbers were found to be very high in self-orientation and very low on the interaction scale.

With regard to internal versus external cues, Marston (1964) found a correlation of r=.27 for 283 Wisconsin students between self-orientation and their tendency to describe themselves as more likely to be influenced by the external environment. Conversely, task-orientation among these students correlated r=-.18 with the same scale of control suggesting that task-oriented subjects are more likely to maintain control over their own fate and to be more responsive to their own inner demands.

A final area of interest concerning the ORI is that of leadership. Needless to say, this is a concern for sports organizers and the data presented by Bass (1977) is of interest. It is reported that task-oriented individuals are less disturbed by conflict and deviation, and they are therefore more tolerant of authoritarian leadership.

In examining the effects of directive leadership in relationship to quality and quantity of output, Bass (1977) coerced twenty-two ROTC students into transcribing a paragraph for two minutes on a typewriter without specifying the reason. Then, another twenty-two subjects were persuaded with reasons to take the test. Among the task-oriented

subjects the quantity of output was higher without affecting the quality when an opportunity to be of help to a graduate student was involved. However, the quality and quantity of performance of the interaction-oriented subjects was considerably greater when they were responding to coercive orders. For the self-oriented, only quality seemed to be greater under coercive orders.

Sport Motivation

Why do individuals take part in sport? Why do athletes put themselves through the rigorous and extremely demanding training schedules that sports organizers have designed? The most obvious answer would be to achieve recognition or perhaps just to achieve some particular goal. Of course it is much more complicated than that and Carron (1978) provided a review that summarized the many factors that are involved.

Singer (1975) pointed out that performance is not merely a function of past experience or learning, but is also a function of motivation. In the absence of either there would be purposeless activity (no learning involved), or there would not be any activity (no motivation). Clearly, both factors are necessary and interlinked. Carron's (1978) paper provided the basis of the present review of factors which contribute to level of motivation in athletes. The major point to be made is that there are a great variety of factors which act as sources of motivation for the young athelte and these various incentives are in many ways affected by situational variables. With this in mind, the coach or instructor must be aware of the complexity of athletic performance which may best be dealt with in terms of focus of motivation due to the susceptability of ignoring important components when attention is placed on achievement only.

Four dimensions are identified which contribute to the total level of motivation. The first involves dimensions within the athlete, second is results or consequences of performance, third is the athletic competition dimension and fourth is task characteristics. While they are naturally interrelated, they are treated by Carron as independent units (see Figure 2).
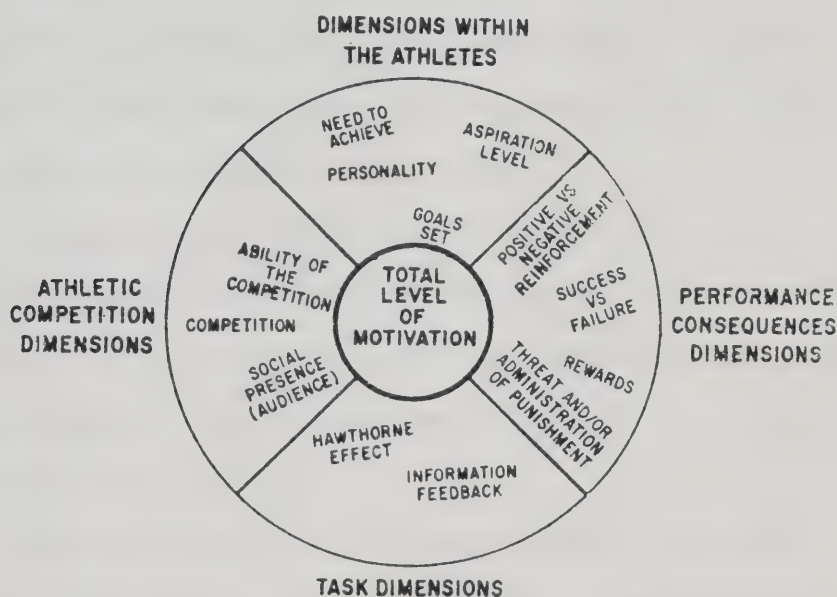
Figure 2. The dimensions of motivation which offset the total level of motivation within the athlete (Carron, 1978, pg. 33).

Within the athlete several factors can be examined in detail. The level of aspiration or, "level of future performance in a task as specified by the individual" (Robb, 1972, pg. 79), is an important concern since there is evidence that behavior is controlled by its consequences (Bandura, 1973). It is therefore of interest to know the effects of success and failure on subsequent goal setting or, aspiration levels.

The relationship is reported as cyclical. That is, when there is success, aspiration levels are raised which will influence

performance which will in turn influence aspiration levels. On the other hand, when there is failure there will be a negative effect on aspiration level which will effect future performance.

Rushall and Siedentop (1972), who approach athletic behavior from an applied behavioral analysis viewpoint, provide a way out of this circle. Their promotion of behavioral shaping through manipulation of the consequences (success and failure) provides the athlete with more realistic goals which can be reached more regularly. These smaller successes will then alter aspirations in the positive direction and there will be subsequent performance increases.

This, what may appear to be a simple solution to the problem of repeated failure is not quite so simple. Other factors which are involved are the age at which the initial failure occurs, the absolute number of previous defeats/victories, and the sequence in which these victories/defeats occurred.

Closely connected to this discussion of aspiration level is another person variable identified as need achievement. While a coach would seem to have little control over the level of need achievement, he can have an effect on the perceived probability of success or failure and thus indirectly, the incentive value of the activity. This point is more than a minor issue if we consider the practice setting. Should a drill or exercise seem to have little value or meaning, the incentive to perform well will be impaired. The teacher must communicate the value in the activity so incentive motivation increases as does aspiration level.

Closely connected to the athlete dimension and sport performance, is the second dimension labelled, Consequences. The major approach to discussion of performance consequences is in behavioral modification

terminology and as such it involves positive and negative reinforcement, and punishment.

Singer (1975) noted that both positive and negative reinforcement can be effective in specific instances although it is desired to make use of positive reinforcement as much as possible. The major reason here has to do with focus of attention. Positive reinforcement is both encouraging and, it brings attention to the correctly completed action. Negative reinforcement is less encouraging and it does not bring attention to the task can focus on the individual without providing information about the task.

Also under the general categorization of positive reinforcement are rewards. Oxendine (1968) noted three classes of rewards, (a) symbolic - praise , stars, decals, crests and the like, (b) material - trophies and money and (c) psychological - including sense of accomplishment, belonging, and knowledge of improvement. These three forms of reward are almost always available to the athlete. However, emphasis on the psychological is believed to be ideal since dependence can result when either symbolic or material rewards are used. The latter two 'can' have the affect of taking attention off the task and placing it on external contingencies with dangerous counter-control effects brought into play. In line with this reasoning, Carron points out that attention must be placed on the activity itself, that focus of motivation must, in primary fashion, be placed upon the task instead of the extrinsic rewards.

Punishment has also been discussed by Oxendine (1968) as well as Rushall and Siedentop (1972). Both stress that the disadvantages of using this procedure outweigh the advantages. The latter authors state that to be effective, punishment must be used infrequently, be severe

when employed, have minimal emotionality attached, be specific and be applied consistently.

More important than the ways to make use of punishment however, is attention to focus of motivation. When dealing within the performance consequence dimension, the key factor must be that of perception. Rather than using social comparitive standards (which is almost necessary in some activities such as wrestling, boxing and judo), absolute standards may be used. The coach may attend to an individually outlined performance chart in which the athlete performs against himself. Thus, focus is placed upon the activity and in so-doing, the coach may provide the perceptual environment for better performance and less anxiety.

The third dimension is that of athletic competition and the environment. Coaches have known for many years that athletes perform differently within the game as compared to the practice situation. The effects of an audience are in some cases very marked indeed with some athletes showing drastic improvements and others tightening up with fear.

Carron points out that there are a number of factors which influence the degree to which the social presence of others can be motivational. The size of the audience as well as audience characteristics (age, sex, relationship to player, ability) will influence the athlete differentially. Ideally, of course, the spectator cannot effect the performance of an athlete except that the athlete perceives the situation in a way to create an increased desire to perform well. Also possible, is that the athletes' perceptions can be fear producing and as such there is a self-defeating effect.

Cottrell, and colleagues (1968), as well as Martens and Landers (1972) provided results indicating that the 'function' of the audience

is also important. If the audience is present to evaluate, there is an increase in motivation. However, Carron reasoned that evaluation apprehension is a form of stress and early in the learning process it can be detrimental to performance. He suggested that learners probably require a great deal of practice time on their own, away from the evaluative presence of the coach or instructor.

With regards to competition, there are a number of individual difference variables which come into play. Athletes are said to differ in competitiveness due to individual variation in motives or incentives. Examples are fear of failure, need to achieve and need to affiliate. Perhaps the most important of these variables is self-other perception of abilities. At the extremes there are athletes who constantly overestimate the opponents ability and under-rate their own. Also, but less often, there are athletes who under-rate the opponent and over-rate themselves. In the first case there is lack of confidence and in the second there is over-confidence. It may be an important part of the coach's job, to present the perceptual picture to the athlete, to help the athlete function within a psychological balance so there is an absence of undue worry, feelings of helplessness and an awareness of overconfidence.

The fourth dimension which Carron dealt with is called task characteristics. In order for an individual to learn, there must be feedback and this information in itself can be motivating (Ammons, 1956). It therefore seems evident that feedback is an essential part of the concept of motivation and this is highlighted in the equation:

Performance = Learning + Motivation

A final variable of note comes from research conducted by the Western Electric Company. In a series of manipulations of

illumination in the plant, it was found that either an increase or a decrease in light increased performance. It was concluded that illumination was not the key factor in performance but that the special attention, the change and the novelty was what produced greater output (Roethlisberger & Dickson, 1939).

While it is of value to review this breakdown of factors which affect total level of motivation, the purpose of the present study includes that of examining relationships using an inventory which measures incentive motivation (Alderman & Wood, 1976). This more general concept, not far removed from focus of motivation, has been operationalized in the form of seven scales including independence incentive, power incentive, affiliation incentive, stress incentive, success incentive, excellence incentive and aggression incentive. It is reasoned that the factors discussed by Carron will vary within the more general realm of over-all incentive to perform in sport.

Summary

Indeed, there is an incredible amount of varied and interrelated literature on the concept of motivation. In an attempt to bring this monster under control the following major points are noted which are within the scope of focus of motivation:

(a) The phrase 'focus of motivation' implies a general orientation which an individual takes in relationship to others and the environment. It may be of two types, a self-serving focus of motive or an outward-serving and job-centered focus. This concept may circumvent the limitations inherent in the use of the terms 'intrinsic' and 'extrinsic motivation'.

(b) Values affect awareness and perception. With focus of motivation on the task, and on the search for a greater understanding of the sport situation, more positive sport behavior is likely to be evidenced.

Attention fixed on subsequent rewards from effort necessarily takes focus away from the task itself.

(c) Beliefs, whether fact or falsehood, play an important role in behavior. Beliefs are engrained early and there is heavy resistance to change.

(d) Infinitesimal bits of information will affect our perception of a situation or of another person. Oftentimes such information makes it difficult to remain objective and this may affect what is learned or retained.

(e) Human beings have elaborate self-defense mechanisms which are brought into action in order to protect self-pride even in the face of contradictory evidence.

(f) High self-esteem is one factor which makes it possible to more effectively deal with society. The roots of self-esteem are within family background and parental practices. The most crucial element within self-esteem is love.

(g) Internal locus of control is a belief which seems to make it possible to deal more efficiently with society.

(h) The orientation inventory (Bass, 1977) may reflect a particular focus of motivation as the self and interaction orientations may be related to extrinsic motivation while task orientation may be related to intrinsic motivation.

(i) It has been recommended that coaches focus attention of athletes on psychological rewards in sport rather than symbolic or material rewards. That is, it has been emphasized that problems may be rooted in too much attention to extrinsic rewards.

(j) Punishment in sport is not recommended as it does not focus attention on the required qualities of successful performance as does posi-

tive reinforcement does. Rather, it places attention on the individual providing negative affect.

(k) There is a reasonable possibility that anxiety has its roots within an external focus of motivation, within a self-serving bias and within a negative belief in oneself and others.

CHAPTER III

RATIONALE, DESIGN, HYPOTHESES AND LIMITATIONS

A. Rationale

Recent debate has raged over the effect of extrinsic rewards on intrinsically interesting activites (Lepper & Greene, 1975, 1976; Reiss & Sushinsky, 1975, 1976). A great deal of research has been published which has been interpreted as explanations to account for decreased play effects such as cognitive evaluation theory (Deci, 1975), the overjustification hypothesis (Lepper, Green & Nisbett, 1973), the competing response hypothesis (Reiss & Sushinsky, 1975), the delay of gratification hypothesis (Ross, Karniol & Rothstein, 1976), and the frustration hypothesis (Perry, Bussey & Redman, 1977). Also, various assorted manipulations have been made with regard to external contingencies such as surveillance (Lepper & Greene, 1975), salience of reward (Ross, 1975), and choice of activities (Swann & Pittman, 1977).

However, the issue of identifying the essence of intrinsic motivation has been somewhat neglected. To date it has been assumed to be evidenced when an experimental subject behaves in a particular way for no apparent extrinsic reason. The tasks used in many of the studies are novel and uniquely experimental such as manipulating soma cubes or solving puzzles. In such cases measurements made in free time periods may record task familiarity or unfinished activity which is not equated to what may more accurately reflect the nature of intrinsic motivation. As derived from the historical review, the present formulation leads to an interpretation of intrinsic motivation based on rational

thinking within a framework which includes 'the good', perceived free-
dom and personal responsibility. Intrinsically motivated behavior then,
may be any behavior which is moved by the desire to express oneself
through a variety of mediums (i.e., business, sport, education) with
focus upon the task.

Within the sporting environment, motivation continues to be
a major concern and the activities involved seem to be of great impor-
tance to the individual. Attention has been brought to bear on the use
of extrinsic rewards (Deci, 1978; Fisher, 1978) and there are those who
have accepted the cognitive social psychological findings and promote
a reduction in focus on external contingencies (Gerson, 1978). On the
other hand there is a suggestion of caution in applying the experimen-
tal evidence (Siedentop & Ramey, 1977). Needless to say the issue is
confusing and further research is necessary with hopes of clarifying
the intrinsic-extrinsic question.

Therefore, despite the number of studies which are reported
to have measured intrinsic motivation, a different attack will be tried
in order to identify the focus of motivation within a group of non-profess-
ional athletes. Hopefully, the identification of central needs, beliefs,
and incentives will provide a clearer picture of the reasons why ath-
letes are involved in sport.

In addition, the physical education instructor and the coach
are presented with an encyclopedia of psychological theory which have
been directed to positive interpersonal functioning and achievement be-
havior. Many and various methods have been advanced in order to help
promote higher sport performance. These methods vary greatly and in-
clude behavior modification programs (Rushall & Siedentop, 1972), anx-
iety reducing techniques (Morgan, 1972; Wittenborn, 1966) and cognitive

methods resulting from research on level of aspiration, need achieve-
ment, personality, feedback and more (reviewed by Carron, 1978). It
must be noted that many approaches have been taken, some of which have
been discussed in Chapter II.

On the practical level however, the teacher of sport is left
standing with a bag full of suggestions, some of which may apply to
sport performance and some which may not. Researchers on the other
hand, have become increasingly aware that bridging the gap from labor-
atory to the practical situation is most difficult if not in many cases,
impossible!

It was the purpose of the present investigation to attempt to
reduce this gap by studying several major psychological constructs to-
gether 'with' the coaches and athletes, and relative to their major
and present sport involvement. The constructs were selected with par-
ticular care and are hypothesized to reflect a main factor which is
fundamental to positive interpersonal functioning as well as achieve-
ment behavior. Should this factor be clear, and should it relate to
positive sport behavior, then its general make-up may be outlined in
terms of motivation focus. In addition, it may be possible to describe
such a factor as being one of the fundamental principles on which sport
excellence is founded.

The approach is not one which can be labelled atomistic. It
is unrealistic to think that any athlete is motivated in sport by only
one incentive. Most often, if not always, the athlete is motivated by
several incentives some of which are more important than others. The
purpose of the present thesis was to search for a 'primary' focus of
motivation for each athlete, and to subsequently examine relationships
with assessed sport behavior.

The following list of questions were asked within the scope of the present study:

1. Is there a dominant factor which provides for increased proficiency in sport which is reflected by the scales based on basic needs, central beliefs, personal orientation and sport orientation?

2. What are the relationships between these scales and the intrinsic-extrinsic motivation continuum?

3. What relationships exist between scales labelled incentive motivation in sport?

4. What is the relationship of sport competition anxiety to focus of motivation?

B. Design

A total of 108 subjects were selected from four Edmonton, Alberta high schools. These subjects, all of whom were active in varsity level sport participation, completed a 9 inventory, 22 scale psychological test battery, the results of which were analyzed by factor analysis.

Coinciding with these measurements, the coaches of each individual completed a behavioral assessment on that athlete. This unusual design therefore included psychological measures completed by the athlete, as well as a behavioral measure on the athlete subjects completed by the various coaches.

Based on the major factor analytic solution, factor scores were calculated for the 108 subjects. Then, in order to help substantiate the nature and hence appropriate labelling of each factor, the two upper extreme subjects were interviewed. Because the

hypothesized factor was of prime importance however, ten upper and ten lower extreme subjects were interviewed.

Correlational analysis was then undertaken relating psychological and behavioral results for three groups. First, the described correlations were calculated for the main group of 100 subjects, since eight had coaches who felt they did not know the subject well enough to satisfactorily complete the behavior assessment. The second and third correlations between psychological and behavioral measures were computed for high (n=21) and low (n=21) groups based on the hypothesized factor scores (see TABLE 1, Experimental Design).

Of particular interest was the make-up of the psychological test battery. Four levels of specificity were included from the first level of basic and growth needs, to the fourth level which was sport specific orientation. The second and third levels include central beliefs and personal orientation. These four levels were then correlated with a fifth level, that of observed behavior based on the coaches' assessments (see TABLE 2).

C. Hypotheses

Due to the complex nature of presenting a correlational hypothesis of all pairs of 22 scales, the null hypothesis has been adopted.

Hypothesis 1

There will be no significant relationships between any of the pairs of twenty-two scales comprising the psychological test battery.

Hypothesis 2

A main factor will result from the factor analysis which

TABLE 1. EXPERIMENTAL DESIGN

MAIN GROUP	PSYCHOLOGICAL AND BEHAVIORAL ASSESSMENTS	PSYCHOLOGICAL DATA ANALYSIS	INTERVIEWS	MAIN PSYCHOLOGICAL BEHAVIORAL ANALYSIS	SUB-GROUP ANALYSIS
Male high school athletes (n=108)	Subjects complete psychological test battery of 9 inventories representing 22 scales	Factor analysis of psychological data and calculations of major factor scores for each subject	Interviews with the extreme subjects based on the major factors with attention on the main (hypothesized) factor	Correlations between the major psychological factors and the behavioral data	High (n=21) and low (n=21) main factor within group psychological-behavioral correlations
	Coaches complete sport behavior rating form on individual athletes.				

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TABLE 2. SPECIFICITY LEVELS (A,B,C,AND D) OF THE PSYCHOLOGICAL MEASUREMENT INSTRUMENTS FROM BASIC AND GROWTH NEEDS TO CENTRAL BELIEFS, PERSONAL ORIENTATION AND SPORT SPECIFIC ORIENTATION AS WELL AS ASSESSED SPORT BEHAVIOR.

Level of Specificity	Measurement Instruments (Psychological measures = 1–9; Behavioral Assessment = 10)
E. General Sport Behavior	10. Sport Behavior Rating Form
D. Sport Specific Orientation	6. The Incentive Motivation Inventory 7. The Intrinsic Motivation Scale 8. The Sport Competition Anxiety Test 9. The Attribution to achieve Scale
C. Personal Orientation	5. The Orientation Inventory
B. Central Beliefs	2. Locus of Control Scale 3. Self-Esteem Scale 4. Faith in Others Scale
A. Basic and Growth Needs	1. The Self-Actualization Test

will load positively on internal locus of control, high self-esteem, high faith in others, task orientation, high self-actualization needs, excellence incentive, intrinsic motivation, and attribution to achieve.

Hypothesis 3

The main factor (from hypothesis 2) will be directly related to positively assessed sport behavior.

Hypothesis 4

There will be no significant relationships between the factor scores and assessed behavior within high and low main factor (from hypothesis 2) groups.

D. Limitations

The major limitation of the present study had to do with definition and measurement instruments. Whenever an inventory is used to assess a pre-defined construct (attribute, trait) an inference is made that the scales involved actually measure that particular construct. The strength of the present study therefore rested on the validity of the inventories which were selected as pertinent to the further understanding of athlete motivation. The phrase 'focus of motivation' was chosen to avoid single continuums such as extrinsic-intrinsic although it was expected that this continuum would reflect the general focus of motivation. It was also hypothesized that several of the selected scales would point to an individual focus of motivation.

Secondly, because the study was correlational in nature, any discussion of directional causality between the different variables will have to be recognized as speculative only.

Finally, measurement error is a common problem when any form of assessment is made. The possibility of type II errors is particularly

salient when multiple comparisons are made. Attention must be paid
to the danger of artifactual results given the large number of compar-
isons performed in the study.

CHAPTER IV

METHOD

A. <u>Psychological Measurement Instruments</u>

The test battery used in the present study, was made up
of nine separate instruments including a total of twenty-two scales.
These assessment devices, which included four levels of specificity
leading into sport behavior, are described in order from the most gen-
eral to the most sport specific.

1. <u>Need Hierarchy</u>

Reddin (1975) has constructed a twenty-eight item inven-
tory which measures needs reflective of Maslow's (1954) hierarchy. Six
scales are included, physical, security, relationship, respect, indepen-
dence, and self-actualization. This relatively new instrument has not
been extensively used   but   there is some interesting data on it.

In the 'Self-Actualization' test manual the author reports
validity studies which were primarily carried out on adult samples in
work situations. Managers at the next level to workers differed signi-
ficantly from managers who were two to six levels above the workers.
Those at the next level to the worker scored higher on the relationship
needs scale. Also reported is that staff workers, without anyone to
supervise, were significantly higher on the respect needs scale.

In a comparison of workers who had earned a university
commerce degree with those who had not, a number of significant differ-
ences were reported. Those who had a degree were significantly higher
on respect and independence needs and lower on physical and security

needs. These results were supported by a comparison of groups which differed in years of education. Those with fewer years of education were generally much higher in security needs and lower in physical, relationship and respect needs.

Finally, comparisons of interest were made between groups of different ages. Consistently, younger subjects were lower in self-actualization needs. There was also a tendency for younger subjects to be higher in respect needs. A group at sixty years and older were higher in security needs and lower in independence needs compared to a group of subjects of ages twenty to twenty-nine years.

Reliability data was also presented based on a sample of second level managers of a government department. The two month test-retest figures for the six scales range from r_{xx}= .74 to r_{xx}= .79 (n= 107).

The format of this inventory involves a series of 'I wish' statements grouped in three's (see Appendix A). The subject is required to read one group of three statements which comprise one of the twenty-eight items, and then assign a total of three points representing weights of importance to him. That is, he may wish equally for all three items and therefore assign the values 1, 1, 1 or he may wish for only one item and assign the values 0, 0, 3 or 0, 3, 0.

In all cases the wish statements include combinations of needs which represent the need hierarchy. In this fashion the results obtained indicate the relative strength of each of the six need categories. No hint is given as to whether these needs are being met or not, measurement here is a simple assessment of need only.

It must further be noted that this inventory has been used primarily with the adult population and it is somewhat risky to use it with high school students. There are some items on the test which likely

have little relevance to youth such as, 'I wish I had a business of my own'. However, because each wish statement is rated relative to two others, validity should not be in any great danger since the scale constructs remain constant within the total sample of subjects. Comparisons of the present results with older subjects would be suspect however.

2. Central Beliefs

Three central beliefs were selected which are, locus of control, self-esteem and faith in other people. These beliefs were chosen since they represent important constructs described as perception of reinforcement control (internal or external), perception of self-worth (esteem) and perception of the trustworthiness and helpfulness of other people.

Locus of Control

In order to determine the perceived internal-external differences in the population, Rotter (1966) designed a self-administered scale which can be completed in less than fifteen minutes. The format includes twenty-nine statement pairs using a forced-choice format. Of the twenty-nine statements, six are filler statements and are not scored (see Appendix B.1).

Rotter reported an internal consistency coefficient (Kuder-Richardson) of 0.70 obtained from a sample of four hundred college students. In addition, for two subgroups of Rotter's sample, test-retest reliability coefficients were computed with a value of $r_{xx}= .92$ for sixty college students after one month. Differences on this scale have been related to anxiety, conformity, depression, low self-esteem and lack of self-responsibility (with externality), and to self-control, altruism, acceptance of responsibility and achievement (with internality).

Self Esteem

The short, ten item Rosenberg (1965) self-esteem scale was selected to measure the individual's rating of his own self-worth. The subject responds to each of the 10 items by checking one of four possible responses which are Strongly Agree, Agree, Disagree and Strongly Disagree. Both reliability and validity studies have been carried out on this scale based on young adult populations, and a reproducability of .93 has been reported (Pfeiffer, Heslin & Jones, 1976). With regards to validation, significant associations have been obtained between low self-esteem and depression, psychosomatic symptoms, anxiety and instability of self-image. It must be noted here that Rosenberg's original method of scoring was not used. The rationale for a Likert system of scoring is presented in Chapter V, pages 134 - 137. Appendix B.2 depicts this scale as it was presented to the subjects of this investigation.

Faith in Others

Rosenberg (1965) constructed a scale which attempts to assess one's degree of confidence in the trustworthiness and help-fulness of people in general (see Appendix B.3).

Despite its brevity (5 items), support for its validity may be found by the fact that the group of respondents whose occupation choices were social work, personnel work, and teaching had the largest portion of high scores on the scale. Equally, those choosing sales-promotion, business-finance, and advertizing had the greatest proportion of low scores. Consistent with these findings, students with a high faith in people were more likely to select people-oriented occupational values while those with low faith in people were more likely to choose what are refered to as extrinsic work values.

The reported reproducibility of this measure is 90.1% and item scalability is 68.2%.

3. Personal Orientation

The orientation inventory (Bass, 1977) is described as a research tool that identifies how a person reacts to the challenge of a job and to those who work with him. Often, mutually exclusive are three kinds of satisfaction, getting the job done, having a happy time with others, or gaining some self-satisfying ends. Thus, classifications labelled Task-oriented, Interaction-oriented, and Self-oriented were drawn from a theory of interpersonal behavior in organizations.

The three scores obtained from this twenty-seven item inventory are described as follows:

(a) Task-orientation - reflects the extent to which a person is concerned about completing a job, solving problems, working persistently and doing the best job possible (test-retest reliability reported is $r_{xx} = .75$).

(b) Interaction-orientation - reflects the extent of concern with maintaining happy, harmonious relationships in a superficial sort of way, often making it difficult to contribute to the task at hand (test-retest reliability reported is $r_{xx} = .76$).

(c) Self-orientation - reflects the extent a person describes himself as expecting direct rewards to himself, the job he is doing or the effects of what he does upon others working with him (test-retest reliability reported is $r_{xx} = .73$).

The format of the twenty-seven items, includes a statement with three possible response choices for each. In every case the subject must rate which of the responses is most prefered and which of the

responses is least prefered. All items include a response indicative of task, interaction or self orientation (see Appendix C).

With regards to comparisons of these three scales with other psychological measures, task orientation has been positively correlated with self-sufficiency and resourcefulness, controlled will power, need endurance, aloof - not sociable and lack of manifest anxiety. The self-centered scale has been positively correlated with dogmatic, disagreeable, aggressive - competitive, manifest anxiety and lack of control while the interaction scale has been positively correlated with need affiliation, socially group dependent, lack of need for achievement, lack of need for aggression and lack of need for autonomy (Bass, 1977).

4. Sport Orientation

Four questionnaires which are specific to the sport situation were included. Two of these instruments deal with motivation, one assesses competition anxiety and the fourth is based on attribution theory.

Incentive Motivation

Recently, an incentive motivation inventory has been constructed which measures the strength of seven psychological incentives in sport (Alderman & Wood, 1976). It is reasoned that what a particular sport holds for the individual is an important determining factor in sport selection and participation. In reference to incentive motivation the authors state,

> The incentive value that an individual attaches to the possible outcomes of actions which he chooses to engage in will, in fact, partially determine the course of action he actually chooses (Alderman & Wood, 1976, pg. 169).

The seven identified incentives which make up the incentive motivation inventory are:

(a) <u>Excellence</u> - opportunities for being very good at something or for being better than anyone else at something, just for its own sake.

(b) <u>Power</u> - opportunities to influence and control other people, particularly their opinions and attitudes of you.

(c) <u>Stress</u> - opportunities for excitement, stress, and interesting experiences, particularly in terms of novelty, uncertainty and complexity.

(d) <u>Independence</u> - opportunities to do things on one's own without the help or criticism of others.

(e) <u>Success</u> - opportunities for status, prestige, recognition, and social approval of one's achievements.

(f) <u>Aggression</u> - opportunities to injure, subdue, intimidate, or dominate other people.

(g) <u>Affiliation</u> - opportunities to attain, maintain and consolidate warm personal relationships with other people.

While this inventory is only in its initial stages of development, it has to this date gone through various stages of development. The authors report that a thorough discussion of the construct of 'incentive motivation' preceeded the categorization of several classes of incentives which make up motivational incentive. Items were then constructed which would tap each class and the inventory was given to a pilot sample of athletes.

Because of the newness of this instrument as well as the value of including these constructs within the present investigation, an item analysis and reliability check was made on each of the seven scales. Those results are presented in Chapter V (pgs. 137 - 143). The incentive motivation inventory is presented in Appendix D.

Intrinsic Motivation

Csikszentmihalyi (1975) has attempted to determine the nature of intrinsic rewards in a variety of different activities which are not seemingly rewarded extrinsically. Examples of such activities are playing basketball, rock climbing and chess playing.

His research included factor analysis which resulted in the identification of eight reasons why people take part in and enjoy the various activities in question. While reflective of the Incentive Motivation Inventory, the rating of these more specific reasons provides a means to assess their relative importance. Also, through factor analysis the reasons which are more clearly intrinsic can be categorized. From this, an individual's intrinsic motivation score can be calculated by summing the identified task focused item ratings and subtracting the task associated item ratings.

However, because Csikszentimihalyi's investigations included activities such as chess, several of the items were very generally constructed. Therefore, the eight reasons were re-worded to refer more directly to sport and hence reduce ambiguity.

A five point Likert scale was used to provide the subject with a range from very unimportant to very important on which he could estimate the value to himself. Correlation analysis and factor analysis were computed as well as a reliability coefficient. These results are presented in the results chapter, pages 143 - 145. The intrinsic motivation scale is presented in Appendix E.

Sport Competition Anxiety

The Sport Competition Anxiety test (SCAT) is a fifteen statement scale which is purported to identify levels of sport anxiety (Martens, 1977). It is described as a trait-anxiety scale which

has been designed for measuring a predisposition to respond with varying levels of state-anxiety in competitive sport situations. It has a form which has been particularly designed for subjects ranging in age from fifteen years of age and older (used in the present study), and it has norms available for both males and females ranging in age from ten years through college-age adults.

A subject is presented with three choices of response, Often, Sometimes, and Hardly Ever. Only ten of the fifteen items are scored as the remaining five items are filler items.

In support of SCAT's validity, Martens (1977) has compared the instrument with several other measures including the Taylor manifest anxiety scale. Correlations of 0.50 and above are reported. A two week test-retest reliability coefficient was calculated as part of the present study which was $r = .86$ (n= 32) which is somewhat higher than Martens reported one week retest value of 0.75 (n= 127). The Sport Competition Anxiety test is presented in Appendix F.

Attribution to Achieve

The findings of attribution theory (i.e., that the attribution of causality with regards to past performance effects future behavior, suggested that a system be devised to tap the general internal-external and stability-instability orientation based on the perception of the causes of success and failure in sport. This was done by presenting the subjects with eight statements which required a rating on the importance of luck, effort, ability and task difficulty with reference to their own successes and failures.

An original questionnaire, which included a four point scale designed by Pfeiffer and colleagues (1976) was given to a small sample of first and second year university athletes (n= 12). The subjects

responded in one of four ways, Agree, Unsure-probably agree, Unsure-probably disagree and Disagree to each of eight statements utilizing the four attributions under both success and failure conditions. An example statement is; "When I succeed in sport, the effort I apply is a major reason".

The results from this response structure provided insufficient variability and it was felt that a mid-point on the scale would be appropriate. Therefore, a second method of assessment was adopted, which utilized a five point Likert scale. The subject would then respond to each of the eight attributional statements answering to the request; "Indicate how often your own failure/success is due to each of the following factors" (see Appendix G).

The method of assessing the attribution to achieve score involved summing the two internal responses (effort and ability) under the success condition with the two unstable responses (effort, luck) under the failure condition. From this value was subtracted the success responses to external factors (luck, task difficulty) plus failure responses to stable factors (ability, task difficulty).

A two week test-retest reliability coefficient was calculated and found to be $r_{xx} = .615$ (n= 32). See page 145 for further rationale.

B. <u>Sport Behavioral Ratings</u>

Kenny, Davood Badie, & Baldwin (1968) made use of a behavioral assessment device which was expanded and adapted for the purposes of the present investigation (see Appendix H). This seventeen item inventory asked the individual coaches to assess the athlete on a variety of behaviors. Responses were on a five point scale and were designed to obtain relative assessments compared to other athletes that

the particular coach had worked with.

Because of the original nature of this instrument, the find-ings were factor analyzed to identify the nature of the items. These results are presented in Chapter V, pages 148 - 149.

C. Definitions

Constructs - postulated attributes of people assumed to be reflected in test performance.

Traits - are the methods of motive expression (consistencies in behav-ior or the mode of adjustment which the subject habitually adopts to meet recurrent situations...the trait construct account(s) for the how of behavior[3].

Incentive Motivation - the incentive value that an individual attaches to the possible outcomes of actions which he chooses to engage in (Ald-erman & Wood, 1976).

Intrinsic Motivation - the causes of behavior connected with the acti-vity itself, behavior valued for its own sake[4].

Extrinsic Motivation - the causes of behavior which are related to but not centered on the activity itself (recognition, friendships, promo-tion, etc.)[5].

Focus of Motivation - the primary emphasis of goal-directed behavior, i.e., the focal point of desire around which incentives are distributed.

Self-esteem - evaluative attitudes toward the self (Coopersmith, 1967, pg. 2).

Faith in Others - one's degree of confidence in the trustworthiness,

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[3] From Weiner, 1968, pg. 173. Reference is also made to McCelland et al, 1953, pg. 28.

[4,5] Expanded from the definitions of Staw, 1976.

honesty, goodness, generosity, and brotherliness of people in general (Rosenberg, 1965).

Internal and External Locus of Control - "when a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then, in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him...we have labelled this a belief in external control. If the person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics, we have termed this a belief in internal control" (Rotter, 1966, pg. 1).

Personal Orientation - a perception variable which includes three types of intention, that of getting jobs done, having happy times with others or gaining some self-satisfying ends.

Trait Anxiety - a disposition to perceive certain situations as threatening and to respond to these situations with varying levels of state anxiety (Martens, 1977, pgs. 4-5).

State Anxiety - an existing or immediate emotional state characterized by apprehension and tension (Martens, 1977, pg. 4).

Perception - the process of becoming aware, coming to understand, to apprehend with the mind.

D. Subjects

The total sample of subjects consisted of 108 male, senior high school students drawn from four public schools in the city of Edmonton, Alberta. The age range of the sample was 15-19 years with a mean age of 16.5 years.

The four school representations were as follows:

School A - 35 subjects

School B - 16 subjects

School C - 29 subjects

School D - 28 subjects

Total - 108 subjects

All of the subjects either participated on one or more of the schools' varsity athletic teams or participated in community league sport which involved a schedule of practice and competition. The sports represented were as follows:

Football -   38 subjects

Basketball -   23 subjects

Wrestling -   14 subjects

Soccer   -   11 subjects

Hockey   -   8 subjects

Rugby   -   4 subjects

Swimming -   4 subjects

Track & Field -   2 subjects

Volleyball -   2 subjects

Tennis -   1 subject

Weight lifting -   1 subject

Total -   108 subjects

E. Procedure

Permission to obtain subjects from the Edmonton public school system was obtained. In the request for subjects, attention was placed on three aspects of the study, (a) the psychological assessment of the athlete subjects, (b) the coaches' assessment of the athlete's

behavior and (c) the feedback which would be given to both the athlete subjects as well as the coaches who were involved (see Appendix J and Appendix K). All three components of the present study were carried out in order to maximize the value of the research.

The physical education directors of each of four schools were contacted and arrangements were made to test a maximum of 35 male athletes who were involved in school athletics at the varsity level. Particular mention was made of the desired cross-section of sports and cross-section of abilities. It was emphasized that no attempt should be made to bias the sample, that it should be representative of the variety of individuals who take part in school athletics.

1. Psychological Testing

The testing sessions were held in regular classrooms of each of the four high schools. The subjects, who were seated comfortably, had the inventory, answer sheet and sharpened pencil placed in front of them before instructions were given. The following list comprizes the context of the discussion which proceeded each of the test sessions:

(a) The subjects were thanked for volunteering to write the inventory which was entitled General Orientation Inventory - University of Alberta. It was clearly emphasized that no one should feel they had to take part in the investigation and further, if they couldn't allow the next one and one-half hours for this task, they should exit immediately with thanks for considering participation. It was clearly emphasized that the subjects were involved of their own accord and confirmed that writing time would be in excess of one hour.

(b) In order to help prevent a build up of anxiety, it was next pointed out that many subjects had found it 'fun' to complete the inventory.

In no case were there any right or wrong answers, the responses which
would be made are simply opinions or beliefs which indicate individual
preferences or individual differences.

(c) The third point of discussion had to do with the format of the
inventory. The complete test battery was compiled in three sections,
1. General Beliefs, 2. Personal Orientation and 3. Sport Orientation.
These three sections, labelled X, Y, and Z, were pointed out to the sub-
jects as well as the fact that within each section were several quest-
ionnaires. The General Beliefs section (X) included questionnaires 1,
2, and 3, the Personal Orientation and needs section (Y) included ques-
tionnaires 4 and 5, while the Sport Orientation section (Z), included
questionnaires 6, 7, 8, and 9. The subjects were asked to examine the
inventory as well as the answer sheet (see Appendix I), and time was
then allowed for questions to ensure all subjects were familiar with
the requirements.

In addition, the first page included a brief description of
the inventory which all subjects were asked to read. That description
was as follows:

> The following inventory is actually made up of a number
> of individual questionnaires. These questionnaires have in-
> dividual instructions so as you complete one, it will be im-
> portant for you to note the instructions for the following
> questionnaire. Throughout the entire inventory there are
> no statements which produce a right or wrong answer. All the
> responses you make will simply be your own opinion. Please
> progress through the inventory in the order of page number
> and answer the statements as accurately as you can, based on
> your beliefs.

At this point the subjects were informed of which section they
were to complete first. One-third of the subjects started with section
X, one-third started with section Y and one-third started with section
Z (see TABLE 3).

(d) Next to be emphasized was the need for honesty in making each res-

ponse. The subjects were shown a feedback form (see Appendix J) on

which they would receive their individual results. It was pointed out

that if they did not respond as accurately as possible according to

their own beliefs, this feedback would not carry any value and hence

would not be interesting feedback. This point was further emphasized

on the front page of the inventory which read,

> The results of your responses will be analyzed and made
> available to you. It is believed that you will find them
> both interesting and informative. Please be as accurate as
> you can by responding to your actual beliefs.

TABLE 3. SYSTEMATIC ORDERING OF THE THREE TEST BATTERY SECTIONS, CEN-
TRAL BELIEFS (X), PERSONAL ORIENTATION AND NEEDS (Y), AND
SPORT ORIENTATION (Z).

Subject Number	Test Battery Section Number		
	1	2	3
1	X	Y	Z
2	Z	X	Y
3	Y	Z	X
4	X	Y	Z
5	Z	X	Y
6	Y	Z	X
.			
.			
.			
n			

(e) Finally, the subjects were reminded to neither rush nor belabor

any of the items and continue to work at a steady pace. Should they

have any difficulties the researcher would be available to clarify

matters.

With these instructions covered, the subjects worked through

the entire test battery. There were no major difficulties encountered other than the occasional person requesting assistance as to an item on which they could not make up their mind. Encouragement was given to state their preference, however small the difference might be, in one direction or another, and then leave the item behind.

The average time taken to complete the inventory was 75 minutes with several subjects taking just over an hour to finish. In only two cases did anyone take over one and one-half hours.

2. Behavioral Assessment

With regards to the assessment of the athlete's behavior, the Sport Behavior Rating form was completed at the coach's leisure. This form (see Appendix H) had a cover page which included the name, sport and school of the athlete in question, as well as the following instructions:

> Please note the athlete's name and focus your complete attention on the experiences you have had with him as his coach, then read the following descriptions and respond by placing a tick (✓) in the appropriate box for each numbered statement. NOTE: It is most important that you remain as objective as possible in making your assessments. Please do not let yourself overrate nor underrate but describe this athlete as you know him to behave. While it is possible that there may be one or two items on which you feel less qualified to respond, please make every attempt to answer all of the items.
>
> In order to promote the accuracy of your judgments, you may find it easiest to complete this rating form at home or in some other quiet and relaxed setting. When you have completed this task, place this form, and any others you may have, in the large envelope which has been provided and then seal it. This envelope will be picked up at the school within a few days.
>
> Finally, the names on these ratings will not be made available to anyone other than you and this researcher. Findings will be written and presented without individual names attached.
>
> Thankyou, in advance, for your time and effort as it is greatly appreciated.

As it turned out, the coaches completed these behavior ratings

in a variety of settings. Some took the forms home, some worked on them in spare periods while others completed them in their offices at lunch break or during after school hours. All forms were returned and all were satisfactorily completed.

3. Interviews

In order to support the nature of the major factors resulting from the test battery, interviews were held for selected subjects. The uppermost two subjects on each of the major factors were questioned on values for them with regards to sport participation as well as their primary reason for taking part. Further, they were asked what types of athletes they admire, how they would like to be seen and indeed, how they believed others saw them. They were also questioned about their perceived level of competence and understanding, their aspirations, whether or not they trained on their own and what they like and disliked about practice and competition.

In all cases the subjects were told that their name had been drawn out of the hat for the purposes of checking the validity of the previously completed questionnaire. No hint was given that they had been specifically chosen.

The interview sites were all held at the particular school the subject attended. The interview rooms varied from a vacant classroom at one school to a medical room at another, while two schools supplied the corner of an equipment room. All rooms were satisfactory and the interviews went smoothly.

A tape recorder was used to avoid the delay of transcribing responses. The subjects were ensured that this was the purpose of the tape recorder, that it would be too hard for the researcher to try and write down all that was said.

4. <u>Feedback to Subjects and Coaches</u>

The results of the psychological assessments were made available to the athletes by way of a specific feedback sheet (see Appendix J). The physical education department heads were met with individually and the nature of the data was explained. A considerable effort was made to clarify the nature of each mental construct and this was followed up by presenting all coaches who were involved, with a short description of the findings (see Appendix K).

CHAPTER V

RESULTS

A. Measurement Instrument Analyses

Due to the relatively untried nature of three of the ass-
essment instruments and the unusual scoring procedures used in a fourth,
item analysis was carried out in order to clarify the nature of the con-
structs reflected by these four scales. The following description out-
lines the rationale and procedures which were used with regard to the
measurement of self-esteem, sport incentive motivation, sport intrinsic
motivation as well as the sport behavioral assessment.

1. Self-Esteem Scale

The Rosenberg (1965) self-esteem inventory (see Appendix
B.2) includes ten statements which are rated by the subject on a scale
from Strongly Agree to Agree, Disagree or Strongly Disagree. The pres-
cribed method of scoring results is a maximum score of 6 since items num-
bered 1, 2, and 3 comprise one point, items 4 and 5 comprise one point,
items 6, 7, and 8 are awarded one point each while items 9 and 10 com-
prise one point (see Figure 3).

If two or three out of three responses for items numbered 1,
2, and 3 are in the shaded area, 1 point is scored. If one or two out
of two responses for items numbered 4 and 5 is in the shaded area, one
point is scored. Items 9 and 10 are scored in identical fashion to items
4 and 5. Items 6, 7, and 8 are scored individually with one point for
each item if the response is in the shaded area.

This method of scoring was not used in the present investiga-

Item	Strongly Agree	Agree	Disagree	Strongly Disagree
1. I feel that I'm a person of worth, at least on an equal plane with others.			//	//
2. All in all I am inclined to feel that I'm a failure.	//	//		
3. I feel that I have a number of good qualities.			//	//
4. I am able to do things as well as most other people.			//	//
5. I feel I do not have much to be proud of.	//	//		
6. I take a positive attitude toward myself.			//	//
7. On the whole, I am satisfied with myself.			//	//
8. I wish I could have more respect for myself.	//	//		
9. I certainly feel useless at times.	//	//		
10. At times I think I am no good at all.	//	//		

Figure 3. The Rosenberg Self—esteem Inventory with Original Scoring Format. NOTE: Responses in the shaded area are scored as low self—esteem.

tion. Instead, values 1, 2, 3, and 4 were assigned in a fashion that would include the information from each separate item based on 4 = high and 1 = low self—esteem. The maximum score would therefore be 40.0 with a minimum score of 10.0. The range of the original scoring method is 6.0 with a minimum of 0.0 and maximum of 6.0.

The reasons why this change in scoring procedure was implemented are several. First, the prescribed method of scoring does not use all the information that the inventory produces and yet each separate item provides information as to the individual's feelings of worth and competence. In addition, the four choices of response from Strongly

Agree, Agree, Disagree to Strongly Disagree which allows the subject
to indicate the direction of his beliefs, also allows him to indicate
the strength of his beliefs and this information is not made use of
under the original scoring procedures.

A second reason for ignoring the original scoring procedure
was that it is possible to obtain incomplete results. Specifically,
a subject A may indicate high self-esteem by the original method of
scoring while a subject B may indicate low self-esteem. It may be,
however, that subject B has actually responded to the inventory in a
fashion that when all items are scored separately, would reflect stronger
feelings of self-worth and competence as compared to subject A. See
Figure 4 for an example of this scoring issue.

Item Number		Subject A				Subject B			
1.	if 2/3	✓				✓			
2.	in clear area score		✓						✓
3.	one	✓				✓			
4.	If 2/2 in clear area	✓				✓			
5.	score one			✓					✓
6.	score 1 if res. in clear	✓				✓			
7.	area "		✓				✓		
8.	"			✓					✓
9.	If 2/2 in clear area			✓					✓
10.	score one			✓					✓
Total Score (original method)		5/6				5/6			
Total Score (prefered method)		3+2+3+3+3+3+2+3+3+3= 28.0 out of 40.0				4+4+4+4+4+3+2+4+4+4= 37.0 out of 40.0			

Figure 4. Comparison of the Original and Preferred Methods for Scoring
the Rosenberg Self-esteem Inventory. NOTE: Rosenberg's sys-
tem of scoring produces a score which varies directly with
low self-esteem. This was reversed in the present example so
that the higher score represents higher self-esteem.

A factor analysis was also conducted on the ten items of the self-esteem inventory based on the total sample of 108 subjects. Since all items loaded substantially on the major factor within the inventory (self-esteem) there seemed to be a clear advantage in scoring each item separately[6] (see TABLE 4).

TABLE 4. EIGENVALUES AND NORMALIZED WEIGHTS FOR TWO FACTORS WITHIN THE SELF-ESTEEM INVENTORY (VARIMAX ROTATED).

Item number	Brief Description	Normalized Weights	
	Eigenvalues	3.590	1.250
1.	Feelings of worth	.248	-.520
2.	Feelings of being a failure	.343	-.033
3.	Good qualities	.308	-.051
4.	Capabilities of doing well	.258	-.070
5.	Not much to be proud of	.353	-.303
6.	Taking positive attitude	.332	-.338
7.	Satisfaction with self	.307	.096
8.	Wish respect for self	.299	.264
9.	Feelings of uselessness	.277	.588
10.	At times think am no good	.405	.300

2. Incentive Motivation Inventory

Alderman and Wood (1976) have recently produced an inventory (see Appendix D) which assesses the strength of seven psychological incentives suggested as fundamental to sport participation.

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[6] In correspondence with Dr. M. Rosenberg, author of this self-esteem scale, he stated that "the scale has frequently been used employing a Likert format and appears to yield results at least as good as those using the Guttman procedure."

Because this instrument is still in its refinement stages with little information available as to its validity and reliability, an item analysis was carried out based on the scores of the total sample of 108 subjects. Each of the seven scales of Excellence, Power, Stress, Independence, Success, Aggression and Affiliation was examined individually.

First, Pearson product-moment correlations were calculated between each individual item and the corresponding scale total. The individual loading of the particular item in question, was not removed so that the total score of each scale includes the values of all ten items. These results are presented in TABLE 5.

Secondly, item analysis procedures were carried out for each of the seven scales based on the total sample of 108 subjects (see TABLE 6). These calculations together with the intercorrelations of items with scale totals indicated the questionable nature of several items which are as follows:

(a) Excellence - items 3, 6, and 10
(b) Power - items 1, 4, 5, and 7
(c) Stress - items 8 and 10
(d) Independence - items 1, 2, 6, and 9
(e) Success - items 1 and 8
(f) Aggression - items 6, 7 and 10
(g) Affiliation - items 3 and 10

Because a maximum number of items would be retained in order to avoid distortion of the meaning contained within each of the incentive motivation scales, the following rationale was used in the elimination of items. Since excellence was of particular interest to the present study three items were removed since they loaded on a "success" element within excellence rather than the major "perfection" element. The items removed were:

TABLE 5. CORRELATIONS OF INCENTIVE MOTIVATION ITEMS WITH CORRESPOND-
ING SCALE TOTALS.

ITEM NUMBER	SCALE						
	Excellence	Power	Stress	Independence	Success	Aggression	Affiliation
1.	.48	.30	.34	.20*	.37	.67	.54
2.	.46	.57	.57	.41	.51	.67	.53
3.	.39*	.51	.44	.42	.49	.47	.29*
4.	.48	.40	.49	.41	.46	.64	.50
5.	.54	.38	.39	.46	.54	.56	.54
6.	.38*	.51	.62	.25*	.48	.28	.57
7.	.44	.28*	.50	.52	.53	.34	.56
8.	.55	.66	.23*	.35	.10*	.59	.47
9.	.53	.69	.40	.38	.57	.60	.42
10.	.39*	.46	.15*	.35	.55	.37	.35

NOTE: The scale total scores, with which each scale item was correlated,
included the values of all ten items.

*items eventually removed.

TABLE 6. EIGENVALUES AND NORMALIZED WEIGHTS FOR TWO FACTORS IN EACH
SCALE OF THE INCENTIVE MOTIVATION INVENTORY.

Item	Normalized Weights per Scale													
	Excellence		Power		Stress		Indepen.		Success		Aggress.		Affil.	
	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2
Eigen-values	2.24	1.24	2.51	1.53	2.22	1.35	2.00	1.42	2.43	1.48	2.91	1.30	2.45	1.50
1.	.36	-.40	.17*	-.49	.31	-.14	.05*	-.51	.12*	.34	.41	-.09	.33	-.16
2.	.31	.39	.42	-.14	.43	-.05	.12*	.45	.38	-.36	.41	.01	.32	-.11
3.	.17*	.36	.31	-.12	.34	.29	.46	-.00	.27	.56	.24	.23	.11*	-.23
4.	.26	.21	.19*	.52	.34	.22	.43	.08	.26	-.00	.37	.44	.29	.54
5.	.39	-.28	.19*	.32	.33	-.32	.37	-.25	.36	-.34	.35	-.34	.40	-.45
6.	.22*	.17	.35	.28	.44	.03	-.07*	.16	.25	-.30	.10*	.55	.39	.16
7.	.32	-.48	.12*	-.16	.33	-.38	.35	.30	.38	-.11	.18*	-.31	.41	-.15
8.	.41	.01	.45	-.29	.02*	.47	.44	-.10	-.04*	-.23	.35	-.08	.33	.27
9.	.41	.10	-.48	-.07	.28	.43	.07*	.57	.45	.02	.38	-.30	.28	-.13
10.	.22*	.40	.28	.40	.06*	-.44	.35	-.16	.41	.41	.19*	.36	.16*	.54

* questionable items

(a) Number 3: The better I perform, the more I like myself.

(b) Number 6: I blame myself when I perform badly.

(c) Number 10: I give 100% no matter who my opponent is.

Two items were removed from both the stress and independence scales. The items removed from the stress scale were:

(a) Number 8: Drills bore me.

(b) Number 10: I like variety in practices.

Both items load on a second factor within the scale which is reflective of variety in activity. The nature of the remaining eight items is that of the mental state resulting from confronting a demanding situation.

The two items removed from the Independence scale were:

(a) Number 1: I would rather go without help when training.

(b) Number 6: I dislike being asked for advice by my teammates.

Item number 6 clearly failed to load with the other items of the independence scale. Item number 1 did however, load on the second factor within the independence scale which may be described as the desire to perform in the absence of spectators. This second element within independence, coupled with the prime factor which refers to being a 'loner', being desirous of making it on one's own, provides a double-barreled assessment of the independence incentive much like the original excellence factor's success and perfection components. Item 1 however loaded only on the second element of this scale and in the direction which would suggest a desire for observers, in this instance the presence of a coach or other individual who might offer some assistance. Because this item did not clearly reflect the independence incentive it was dropped from further analysis. Items 2 and 9 however both loaded strongly on the second factor, that of reflecting the de-

sire to perform without spectators, so both were retained.

Three scales had one item removed. From power was taken item 7, from success item 8 and from affiliation item 3. Only the aggression scale remained intact.

The power item 7 which is "Coaches give me too much advice", did not load on either of the two dominant factors within the scale. The first factor may be described as 'dominance' while the second may be labelled 'leader power'. Items 1, 4 and 5 were retained because they loaded on the second factor of 'leader power'.

The success item 8, "I participate in sport because my parents want me to", failed to contribute to the major component of success labelled 'winning'. Equally, it did not reflect the second component on the success scale, labelled 'recognition' while questionable item 1 contributed to some extent to both factors so was retained.

Finally, affiliation item 3, "I can be friendly with teammates who do things which I consider wrong" was removed from further analysis since it did not load on the first factor within the scale which may be labelled 'belonging', nor the second factor of 'friendship'. Item 10 did however contribute strongly to the friendship component and for this reason was retained.

The aggression scale appears to contain two components as well. The first, 'forcefulness' is strongly represented by the ten items while a 'dominance' factor is secondary. All items load to a degree on either of the two components and thus all ten items were retained.

In summary, the seven scales within the incentive motivation inventory reflected the following components:

(a) Excellence —   perfection

(b) Power —   dominance, leader power

(c) Stress –   challenge and excitement

(d) Independence – loner, free from spectators

(e) Success –   winning, recognition

(f) Aggression –   forcefulness, dominance

(g) Affiliation –   belonging, friendship

Therefore, correlations were re-calculated with the identified ten items removed. Again, the individual loading of the particular item was not removed so that the total score for each scale included the values of all items retained (see TABLE 7).

TABLE 7. CORRELATIONS OF INCENTIVE MOTIVATION ITEMS WITH CORRESPONDING REDUCED SCALE TOTALS (10 ITEMS REMOVED).

ITEM	SCALE						
	Excellence	Power	Stress	Independence	Success	Aggression	Affiliation
1.	.55	.31	.48	X	.38	.67	.55
2.	.45	.59	.61	.32	.50	.67	.54
3.	X	.51	.49	.36	.50	.47	X
4.	.50	.42	.56	.54	.44	.64	.52
5.	.57	.40	.47	.53	.55	.56	.54
6.	X	.54	.62	X	.48	.28	.57
7.	.55	X	.51	.60	.53	.34	.55
8.	.62	.65	X	.53	X	.59	.50
9.	.54	.68	.44	.45	.59	.60	.46
10.	X	.46	X	.45	.57	.37	.39

X refers to item removed.

NOTE: The scale total scores included all individual items for that scale.

In addition, item analysis procedures were again carried out for each of the seven scales but with the ten items removed. TABLE 8 presents the results of this analysis and while there are still some items which are questionable, the solution which removed ten items in total was retained for subsequent analysis based on minimum reduction.

TABLE 8.   EIGENVALUES AND NORMALIZED WEIGHTS FOR TWO FACTORS FOR EACH
SCALE OF THE INCENTIVE MOTIVATION INVENTORY WITH TEN ITEMS
REMOVED.

ITEM	Normalized Weights per Scale													
	Excellence		Power		Stress		Indepen.		Success		Aggress.		Affil.	
	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2
Eigen-values	2.08	1.11	2.49	1.52	2.21	1.12	1.99	1.28	2.43	1.46	2.91	1.30	2.44	1.48
1.	.40	-.33	.17	-.51	.32	-.11	X	X	.12	.29	.41	-.09	.34	-.21
2.	.29	.57	.42	-.16	.43	-.11	.06	.67	.39	-.31	.41	.01	X	X
3.	X	X	.31	-.13	.34	-.28	.11	-.17	.26	.59	.24	.23	.32	-.11
4.	.25	.39	.19	.52	.34	.12	.46	-.28	.26	.11	.37	.44	.30	.54
5.	.41	-.41	.19	.31	.32	.48	.43	-.40	.36	-.40	.35	-.34	.39	-.46
6.	X	X	.36	.25	.43	-.08	X	X	.25	-.34	.10	.55	.39	.20
7.	.38	-.40	X	X	.32	.56	.38	.37	.38	-.06	.18	-.31	.41	-.17
8.	.45	.26	.45	-.30	X	X	.35	-.09	X	X	.35	-.08	.33	.26
9.	.42	.17	.47	-.08	.28	-.58	.44	.12	.45	-.04	.38	-.30	.29	-.18
10.	X	X	.27	.41	X	X	.35	.35	.40	.42	.19	.36	.17	.52

X refers to item removed

Finally, two week test-retest reliability coefficients were cal-
culated based on the reduced scale.   The resultant reliability coeffic-
ients are as follows: Excellence = .806, Power = .609, Stress = .863,
Independence = .504, Success = .778, Aggression = .817, and Affiliation =
.834 (n = 32).

3. Intrinsic Motivation Scale

Csikszentmihalyi (1975) has presented a list of eight
reasons why people take part in a variety of activities. These eight
reasons are suggested as inclusive of intrinsic and extrinsic rewards.

In order to obtain an intrinsic motivation score for sport
participation, these eight reasons were adjusted slightly to refer more
directly to sport (see Appendix E) and then presented to each subject

as part of the total inventory. The subjects were asked to rate the importance of each reason on a five point scale from 1 = very unimportant, to 5 = very important.

At face value, it appeared that four items were relatively intrinsic while four items were of a relatively extrinsic nature. Intrinsic, in this regard, is referenced to testing oneself with personal ideals with focus on the actual activity. Extrinsic involves reasons which surround the physical activity but which are not the physical activity itself. The four task focused (intrinsic) items were considered to be (b), (d), (g), and (h) while the task associated (extrinsic) items were considered to be (a), (c), (e), and (f). The reasoning behind item allocation is presented in TABLE 9.

TABLE 9.   ITEMS AND NATURE OF EACH ITEM USED IN THE ASSESSMENT OF INTRINSIC MOTIVATION.

Item	General Focus of Attention	Nature
(a) Friendship, companionship	on friends	Associated
(b) Development of sport skills	on the activity	Task
(c) Emotional release	on release of inhibitions	Associated
(d) The physical activity itself, the action	on the activity	Task
(e) Recognition by friends and others	on recognition	Associated
(f) Measuring self against others	on social comparison	Associated
(g) Enjoyment of experience through use of skills	on the activity	Task
(h) Measuring self against own ideals	on the activity	Task

In order to give support to this observation of the nature of these eight items, correlations and factor analysis procedures were both

performed. Two factors were produced which are reflective of intrinsic and extrinsic sport motivation. Pearson product-moment correlations for each item and sub-test score are presented in TABLE 10 and factor analysis results are presented in TABLE 11.

While items (a) and (f) are weakest with regards to differentiation between the two factors, it was felt that all eight items did discriminate to a degree, so all were retained. The intrinsic motivation score was calculated by summing each subject's ratings on items (b), (d), (g), and (h) and then subtracting the sum of his ratings on items (a), (c), (e), and (f). Because negative intrinsic motivation scores were obtained, all scores were adjusted by adding the value of 5.0 which produced positive scores for each subject. The minimum score possible was 1.0 and the maximum score for any one subject was 15.0.

A two week test-retest reliability coefficient was .662 (n=32) for this intrinsic motivation score.

4. Attribution to Achieve Scale

The attribution to achieve score was calculated on the basis of attribution theory (Heider, 1958; Weiner, 1972). This theory outlines four attributable reasons to explain success and failure outcomes. These four reasons are, effort, ability, task difficulty and luck. An individual may, for example, attribute success to effort and ability and failure to luck and lack of effort. In other words, success is attributed to oneself, while failure is attributed to unstable factors. In this regard, an athlete will work to achieve and when there is success, he will accept it as a product of his efforts and his ability. When there is failure however, the high achievement subject more often attributes

TABLE 10. CORRELATIONS OF THE EIGHT ITEMS AND SUB-TEST TOTALS (TASK = (b)+(d)+(g)+(h); ASSOCIATED = (a)+(c)+(e)+(f)) USED TO OBTAIN THE INTRINSIC MOTIVATION SCORE.

Item	Nature	a	b	c	d	e	f	g	h	Task Focus Sub-test	Task Assoc. Sub-test
(a) Friendship	Associated		.26*	.29*	.04	.23*	-.11	.23*	.02	.19	.52
(b) Develop Sport Skills	Task			.09	.36*	.06	.07	.22*	.22*	.63	.18
(c) Emotion release	Associated				-.06	.29*	.20*	.10	.12	.10	.73
(d) The activity, the action	Task					-.00	.14	.30*	.29*	.69	.05
(e) Recognition	Associated						.30*	.14	.11	.12	.70
(f) Measure with others	Associated							.10	.26*	.21	.58
(g) Enjoyment of experience through use of skills	Task								.42*	.71	.21
(h) Measure with ideals	Task									.72	.21

* For 106 degrees of freedom .195 and .230 are needed for significance at the .05 and .01 levels of confidence respectively.

TABLE 11. COMMUNALITIES AND FACTOR LOADINGS OF THE EIGHT ITEMS USED TO ASSESS INTRINSIC MOTIVATION (VARIMAX ROTATED).

Item	COMMUNALITY	FACTOR A TASK FOCUS	FACTOR B TASK ASSOC.
(a) Friendship, companion- ship	.157	.134	.374*
(b) Develop sport skills	.223	.456*	.122
(c) Emotional release	.388	.005	.623*
(d) The activity, the action	.420	.642*	-.088
(e) Recognition	.320	.060	.562*
(f) Measure with others	.111	.199	.267*
(g) Enjoyment through use of skills	.337	.543*	.205
(h) Measure with ideal	.325	.545*	.169

* key loadings

the outcome to the unstable factors of lack of effort and luck which in essence is not liable to retard achievement tendencies.

On the other hand however, a subject may more often attribute success to luck and to the task being easy, such as weak opposition. In this case, success is not accepted. Equally, when failure is encountered, attributions may be to stable factors of lack of ability and the difficulty of the task. Both of these latter attributions do not provide a positive force to achieve.

The attribution score was calculated according to the above reasoning. Subjects responded to each possible attribution (effort, ability, luck, task difficulty) under both success and failure conditions (see Appendix G). A five point scale was used and an individual's responses to (c), (d), (e), and (g) were summed. From that total the sum of items (a), (b), (f), and (h) was subtracted to give an attribution

to achieve score.

Because negative attribution scores were obtained, all scores were adjusted by adding the value of 6.0 which produced positive scores for each subject. The minimum score possible was 1.0 and the maximum score for any one subject was 16.0 (see Figure 5). The two week test-retest reliability coefficient was .615 (n=32) for this attribution to achieve score.

Item	Brief Description	Response (1 = never; 5 = always)				
(a)	Failure due to ability	①	2	3	4	5
(b)	Failure due to hard task	1	②	3	4	5
(c)	Failure due to lack of effort	1	2	3	④	5
(d)	Failure due to bad luck	1	2	③	4	5
(e)	Success due to effort	1	2	3	4	⑤
(f)	Success due good luck	①	2	3	4	5
(g)	Success due to own ability	1	2	3	4	⑤
(h)	Success due to easy task	1	2	③	4	5

$$\text{Attribution Score} = (c+d+e+g) - (a+b+f+h) = 17 - 7 = 10$$
$$\text{Adjusted Score} = 10 + 6 = 16$$

Figure 5. Attributions of success and failure based on Attribution theory - an example.

5. Sport Behavioral Rating Form

Based on a behavioral inventory devised by Kenny et al (1968), a seventeen item instrument was constructed to assess the athlete's behavior as rated by his coach (see Appendix H). Because of the indirect nature of this behavioral data, the first item on the inventory assessed the extent to which the coach felt he knew the

the particular subject. Even though it might be assumed that the coach would know each of the athletes he works with, eight responses were received in which the coach indicated that he knew very little about the particular subject. These eight subjects were subsequently dropped from the behavioral analysis.

First, Pearson product-moment correlations were calculated between each of the seventeen items. Based on 100 subjects, only eleven correlations were not significant at the α = .01 level of significance and only five correlations were not significant at the α = .05 level of significance (see TABLE 12).

Secondly, factor analysis was carried out based on all seventeen items. A three factor solution resulted which is depicted by TABLE 13. Three items were dropped, number 1 because it is a statement of familiarity and numbers 13 and 16 because they loaded equally on all three factors. The three factors were labelled emotional stability, self-direction, and sport competence.

Factor analysis was again carried out but on only the remaining fourteen items (see TABLE 14). Based on these findings, four behavior scores were calculated. The first three represent the three factors while the fourth behavioral score is made up of the sum of all fourteen items for each subject.

B. <u>Major Factor Analytic Solution</u>

Pearson product-moment correlations were calculated for twenty-two scales based on the responses of 108 subjects (see TABLE 25, pg. 175 for means and standard deviations). The twenty-two scales were as follows:

TABLE 12. CORRELATIONS OF THE SEVENTEEN ITEMS WHICH MADE UP THE SPORT BEHAVIORAL RATING FORM.

ITEM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Familiarity with subject		.32	.36	.43	.26	.31	.37	.17*	.27	.36	.20*	.30	.33	.39	.04*	.29	.17*
2. Sport proficiency			.46	.75	.61	.47	.71	.26	.44	.31	.24*	.24*	.52	.39	.04*	.29	.17*
3. Training effort				.57	.43	.80	.53	.61	.63	.42	.28	.46	.60	.73	.20*	.45	.47
4. Sport understanding					.61	.49	.74	.25*	.50	.38	.30	.34	.57	.49	.27	.41	.24
5. Competition consistency						.44	.72	.45	.39	.45	.29	.32	.59	.51	.27	.30	.33
6. Self-motivated							.53	.61	.55	.39	.26	.44	.60	.70	.34	.45	.42
7. Alertness to tactics change								.42	.43	.45	.46	.44	.66	.59	.26	.43	.43
8. Increase effort when fail									.56	.49	.45	.54	.58	.63	.28	.39	.60
9. Not easily distracted										.35	.34	.38	.55	.66	.34	.54	.45
10. Social adjustment											.42	.58	.45	.49	.21*	.43	.56
11. Emotional control												.63	.43	.44	.43	.50	.60
12. Conformability to standards													.65	.65	.54	.45	.73
13. Planfulness														.72	.50	.42	.55
14. Attention span															.29	.51	.62
15. Aggression control																.29	.49
16. Receptivity to instruction																	.39
17. Lack of interactive problems																	

For 98 degrees of freedom .197 and .257 are needed for significance at the .05 and .01 levels of confidence respectively.

* indicates non-significant relationship at .01 level of confidence.

TABLE 13. COMMUNALITIES AND LOADINGS FOR THE SEVENTEEN BEHAVIORAL ITEMS INTO FACTORS EMOTIONAL STABILITY, SELF-DIRECTION AND SPORT COMPETENCE (VARIMAX ROTATED).

ITEM	Communality	Emotional Stability	Self-Direction	Sport Competence
1. Familiarity with subject**	.203	.126	.247	.354
2. Sport proficiency	.719	.056	.209	.820*
3. Training effort	.784	.171	.795*	.350
4. Sport understanding	.787	.136	.265	.836*
5. Competition consistency	.558	.269	.243	.653*
6. Self-motivation	.705	.162	.750*	.342
7. Alertness tactics change	.780	.324	.269	.776*
8. Increase effort when fail	.602	.449	.621*	.122
9. Not easily distracted	.533	.226	.618*	.315
10. Social adjustment	.461	.547*	.280	.289
11. Emotional control	.611	.749*	.121	.190
12. Conformability to standards	.731	.762*	.359	.147
13. Planfulness**	.650	.401	.514	.474
14. Attention span	.779	.397	.723*	.314
15. Aggression control	.405	.614*	.064	.155
16. Receptivity to instruction**	.367	.391	.378	.269
17. Lack of interactive problems	.722	.746*	.403	.052

* key loadings for identification of each factor
** items not used in either the calculation of the three behavior scores of emotional stability, self-direction and sport competence, or the total behavior score.

TABLE 14. COMMUNALITIES AND LOADINGS OF FOURTEEN ITEMS INTO THREE FACTORS, EMOTIONAL STABILITY, SELF DIRECTION AND SPORT COMPETENCE (VARIMAX ROTATED).

Item and Description	Communality	Emotional Stability	Self-Direction	Sport Competence
1. proficiency	.784	.052	.184	.865*
2. effort	.813	.147	.811*	.365
3. understanding	.820	.129	.246	.862*
4. consistency	.652	.284	.204	.728*
5. self-governed	.754	.127	.784*	.351
6. alertness	.798	.314	.266	.793*
7. failure incr. effort	.699	.436	.709*	.083
8. maintain attention	.622	.157	.709*	.307
9. social adjustment	.541	.605*	.278	.312
10. emotion control	.684	.798*	.123	.179
11. conformability	.748	.758*	.395	.129
12. attention span	.797	.357	.754*	.318
13. aggression control	.621	.772*	-.001	.160
14. no problems	.774	.748*	.462	-.025

* key loadings for factor identification

1. Locus of Control (LC)
2. Self-esteem (SE)
3. Faith in Others (FIO)
4. Task orientation (TO)
5. Self orientation (SO)
6. Interaction orientation (IO)
7. Physical needs (PN)
8. Security needs (SN)
9. Relationship needs (RLN)
10. Respect needs (RSN)
11. Independence needs (IN)
12. Self-Actualization Needs (SAN)
13. Excellence (EXC)
14. Power (PWR)
15. Stress (STR)
16. Independence (IND)
17. Success (SCS)
18. Aggression (AGG)
19. Affiliation (AFF)
20. Intrinsic motivation (IM)
21. Anxiety (ANX)
22. Attributions (ATT)

TABLE 15 presents the individual correlations between these twenty-two scales. The correlations of the three personal orientations (TO, SO, and IO) reflect the ipsative nature of the orientation inventory. Because the factor analytic solution requires non-ipsative data, since the resultant correlation inverse is impossible, the interaction orientation score was dropped. Losing this score was not of great consequence since interaction orientation is reflected by both relationship needs and sport affiliation incentive, items 9 and 19 respectively.

Similarly, independence need (item 11) was dropped because the self-actualization test, scales 7 to 12 are ipsative. Losing this score was not of great consequence either since independence needs are reflected negatively by relationship needs and by sport affiliation incentive.

Factor analysis was subsequently carried out based on the remaining twenty scales. A five factor solution was obtained including factors Affiliation, Principle, Self versus Task, Provincial and Respect versus Security (see TABLE 16).

TABLE 15. CORRELATIONS OF THE ORIGINAL TWENTY-TWO SCALES REPRESENTING THE HIERARCHY OF NEEDS (SCALES 7–12), CENTRAL BELIEFS (SCALES 1–3), PERSONAL ORIENTATION (SCALES 4–6), SPORT INCENTIVES (SCALES 13–19) AND SPORT INTRINSIC MOTIVATION, ANXIETY AND ATTRIBUTION (SCALES 20–22).

SCALE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1. Locus of control		.15	.25*	.04	-.02	-.02	-.09	-.07	-.00	.12	-.17	.19*	.15	.04	.20*	-.20*	-.03	-.21*	.07	.09	.05	.30*
2. Self-esteem			.11	.05	.13	-.19*	.07	.12	-.15	-.27*	-.05	.23*	.02	.01	.13	-.10	.07	-.09	-.02	.07	-.03	.11
3. Faith in others				-.05	-.11	.15	-.01	-.09	.17	-.11	-.09	.07	.02	.08	.10	-.26*	.11	-.13	.18	-.07	.08	.11
4. Task orient.					-.53*	-.47*	.20*	.02	-.30*	-.11	-.07	.25*	.06	-.04	.11	.22*	.20*	-.01	-.27*	.25*	.12	.05
5. Self orient.						-.43*	.17	-.10	-.03	.23*	.27*	-.13	.04	.17	-.06	.02	.32*	.17	-.08	.15	.12	.03
6. Interaction orientation							.03	.09	.34*	-.13	-.22*	-.14	-.03	-.14	-.07	-.23*	-.15	-.15	.34*	-.10	-.02	-.06
7. Physical nds.								.00	-.20*	-.22*	.41*	-.16	.01	.06	.03	.16	-.04	.12	-.11	.16	.04	.03
8. Security nds.									-.25*	-.51*	-.14	-.18	-.01	-.12	-.16	-.10	-.05	.04	-.03	.00	-.09	-.20*
9. Relationship needs										.15	-.38*	-.45*	.13	.17	.01	-.15	-.00	.06	.34*	.21*	-.00	-.06
10. Respect nds.											.05	-.31*	-.03	.17	.16	.03	.27*	.15	.20*	.11	.11	.02
11. Independence needs												.01	.06	.06	.01	.00	.04	.08	-.24*	-.04	-.06	-.10
12. Self-actualization nds.													.11	-.30*	-.01	.09	-.15	-.37*	-.19*	.20*	.02	.30*
13. Excellence I.														.16	.31*	-.11	.01	-.02	.05	.25*	.22*	.10
14. Power I.															.33*	-.01	.30*	.31*	.12	.20*	-.07	.15
15. Stress I.																.02	.08	.13	.14	.03	.02	.02
16. Independence I.																	-.15	.18	-.59*	.19*	-.13	-.05
17. Success I.																		.35*	.18	-.21*	.14	-.01
18. Aggression I.																			-.09	-.20*	.01	-.18
19. Affiliation I.																				-.23*	.08	-.08
20. Intrinsic Mot.																					.02	.21*
21. Anxiety																						-.07
22. Attributions																						

* For 106 degrees of freedom .195 and .230 are needed for significance at the .05 and .01 levels of confidence respectively.

TABLE 16. COMMUNALITIES AND LOADINGS FOR THE TWENTY SCALES INTO FACTORS AFFILIATION, PRINCIPLE, SELF VERSUS TASK, PROVINCIAL AND RESPECT VERSUS SECURITY (VARIMAX ROTATED).

SCALE	COMMUNALITY	AFFILIATION	PRINCIPLE	SELF-TASK	PROVINCIAL	RESPECT-SECURITY
1. LC	.278	.217	.474*	.013	.042	.064
2. SE	.280	.052	.370*	.115	.080	-.348*
3. FIO	.154	.349*	.172	-.015	.042	-.021
4. TO	.511	-.257	.206	-.626*	.078	-.063
5. SO	.790	-.196	.011	.858*	.117	.034
6. PN	.152	-.169	-.026	-.249	.186	-.163
7. SN	.577	.032	-.245	-.056	-.051	-.714*
8. RLN	.400	.405*	-.327*	.048	.035	.355*
9. RSN	.597	.027	-.062	.221	.222	.703*
10. SAN	.604	-.165	.657*	-.085	-.357*	-.103
11. EXC	.173	.074	.322*	-.080	.237	-.040
12. PWR	.431	.085	-.007	.096	.633*	.115
13. STR	.372	.107	.270	-.142	.503*	.117
14. IND	.613	-.747*	-.079	-.162	.034	.145
15. SCS	.336	.098	-.044	.389*	.416*	.015
16. AGG	.523	-.225	-.375*	.112	.564*	-.012
17. AFF	.584	.740*	-.097	.081	.094	.110
18. IM	.233	-.228	.324*	-.253	-.100	-.045
19. ANX	.039	.091	.088	.135	.050	.050
20. ATT	.228	-.003	.465*	.019	.003	.106

* key loadings used in factor identification.

It is of interest to note that the eight subjects which were not used in the behavioral data analysis were at or below average on the principle factor.

C. Interview Data Based on Major Factors

In order to help clarify the nature of the five major factors, two subjects representative of each factor were interviewed. In each case, the two subjects with the highest score for the particular factor were asked a series of ten questions. In addition, these ten subjects were asked to rank order, from most to least important, the eight reasons for taking part in sport which are the make-up of the intrinsic motivation scale. In one case a subject (PV1) was very high on two factors, both self- task   and provincial. His results are presented here under the provincial factor on which he was more clearly extreme compared to the other subjects (see TABLE 17).

TABLE 17.   INDIVIDUAL FACTOR SCORES FOR THE TWO UPPERMOST SUBJECTS IN AFFILIATION, PRINCIPLE, SELF-TASK, PROVINCIAL AND RESPECT-SECURITY.

Subject	Affiliation Score	Principle Score	Self-Task Score	Provincial Score	Res.-Sec. Score
Affil.(A1)	<u>70.2</u>	58.4	46.7	62.0	50.4
Affil.(A2)	<u>68.4</u>	59.0	46.7	50.0	50.4
Princ.(PR1)	43.2	<u>92.0</u>	50.7	55.7	48.4
Princ.(PR2)	36.1	<u>77.4</u>	40.1	35.2	44.8
Self-T.(ST1)	43.9	51.7	<u>72.5</u>	46.1	46.3
Self-T.(ST2)	60.0	52.6	<u>71.3</u>	50.5	40.3
Prov.(PV1)	38.8	58.6	77.4	<u>75.7</u>	42.5
Prov.(PV2)	37.5	43.8	33.9	<u>90.0</u>	46.1
Res.-Sec.(RS1)	48.3	40.5	64.6	33.8	<u>77.9</u>
Res.-Sec.(RS2)	60.3	44.1	56.6	59.1	<u>80.4</u>

Some indication of the nature of these five factors may be obtained from examination of the rankings of the eight reasons for sport

participation. The highest rankings for the uppermost two subjects for each factor were ascribed to the following reasons:

(a) Affiliation factor (n=2) — <u>friendship</u>, companionship.

(b) Principle factor (n=2) — <u>development</u> of sport skills.

(c) Self- Task   factor (n=2) — <u>enjoyment</u> of the experience through use of skills.

(d) Provincial factor (n=2) — the <u>physical activity</u> itself, the <u>action</u>.

(e) Respect—Security factor (n=2) — <u>recognition</u> by friends and others.

The remaining three reasons, not included above, are also of interest. 'Emotional release' was ranked very low for eight of the ten subjects with the exception of those two who were high in the provincial factor. Equally, 'measuring self against others' was ranked highest by the two provincial factor subjects while 'measuring self against own ideals' was ranked highest by the principle factor subjects.

This very brief description is presented to help clarify the nature of each factor. To it is added the following interview data which included answers to a series of ten questions presented to each subject. These ten questions are grouped in three parts; (a) incentive value in sport, (b) image incentive and self—concept in sport, and (c) effort and direction in sport. While the individual responses have been categorized under the five main factors, it must be noted that there is naturally some overlap. That is, both of the high affiliation sub-jects (A1 and A2) were relatively high on the principle factor as well, and subject A1 was relatively high on the provincial factor. Subject ST2, who was extreme on the self –task factor was relatively high on affiliation. As previously mentioned, subject PV1, who was extreme on the provincial factor, was also extreme on the self—task factor. Sub-jects RS1 and RS2, and respect—security factor, were relatively high on

self-task and affiliation respectively.

The interview data is presented in the exact words of each subject in order to help eliminate the possibility of experimenter bias in transcription. Only some of the pause statements such as "well, I guess", and "Um, let me see" have been eliminated. Therefore, this information includes only the answers to ten questions which were presented in the following order:

1. What are the values for you through participation in your major sport?

2. What is the primary reason, or perhaps two reasons why you are involved in your major sport?

3. What are your aspirations in sport?

4. Do you work out on your own and if so what do you do?

5. What kind of athletes to you admire, can you name any and describe why you admire them?

6. How competent are you compared to others on your team and in your league?

7. How well do you think you understand the techniques, strategy and tactics involved in your sport?

8. What are your thoughts on competition and on easy and hard workouts?

9. How would you like to be seen by others?

10. How do you think other people see you?

(see TABLE 18 for a summary of the key responses for the top two subjects for each of the five major factors, page 167).

1. Area One - Incentive Value in Sport

The two questions asked were, (a) what are the values for you through participation in your major sport?, and (b) what is the primary reason, or perhaps two primary reasons, why you are involved in your major sport?

High Affiliation

Subject A1 (Basketball) —"First I like sports for the exercise, and then I like it because of the people I meet .... on road trips you get to know people." The primary reason is, "just to meet new friends and then I suppose fitness, just those two."

Subject A2 (Basketball) — "The mental part, to be with the guys, team sports are the only kind I play, stay in shape, getting yourself used to pressure, getting along with people". The primary reason is, that "it is something I can keep achieving at and, get along with others."

High Principle

Subject PR1 (Swimming) — "It feels good to work hard and achieve something and it also helps me organize my time, I go to bed earlier when I'm in training. There are travel opportunities and I can accomplish different levels." The primary reason is, "I like sports and I like to think that I'm good at swimming, I get alot out of it, I'm not really sure, I'm better at it than other sports and while I used to be a decent wrestler, I do swimming because there are more opportunities here."

Subject PR2 (Track & Field) — "Well, part of it is keeping in shape. I like competition, I don't like team sports because often everyone starts hollering at each other and one guy hogs the ball. In track and field you compete against yourself, you try to excell against some standard. When I'm not in training I start to get down in the dumps, I get bored, I don't like sitting around." The primary reason is, "the competition and to keep in shape also. The challenge, the excitement just before the race, I like to do things by myself."

High Self-Task

Subject ST1 (Football) — "The enjoyment of playing, you learn something that those who are not in sports will miss, the cohesiveness of friends and a team, I learn techniques I can do with my body, I enjoy winning." The primary reason is, "I've always wanted to play and maybe make pro', it might be a career."

Subject ST2 (Football) — "I just like it, the fun, team spirit, no descention, work with others on that team. The feeling of competition, when we win it feels good and its a challenge to yourself. I was the captain and I liked that, I like people to look up to me a bit." The primary reason is, "the competition and the fun."

High Provincial

Subject PV1 (Football) — "I get a thrill out of sports, I enjoy the competition, really don't know, using my body, playing together with a bunch of guys and in front of people...the crowd." The primary reason is, "conditioning my body, I love the sport ....I'm proud of my body, to achieve goals....I like to be better than others, I'm not too smart in school."

Subject PV2 (Soccer) — "It is somewhat physical, the endurance, the skill, to get along with others. One player can motivate the others, skill, I try to reach my potential." The primary reason is, "the running

and physical, I've always like physical sports, there's contact, emotion and stress on a person. Sometimes he doesn't control his emotions, he'll get really involved, yell at others, tell others what they are doing wrong and he'll get real mad sometimes....the slide tackling, the contact, I go in there and rough up the goalies, within the rules, if they juggle the ball, just run him down or whatever you have to do."

High Respect-Security

Subject RS1 (Swimming) - "It gives you a little bit of recognition. I like swimming, it keeps you in shape and it's a way to compare with others, see how you stand." The primary reason is, "I think largely because I enjoy it and also because of the recognition."

Subject RS2 (Football) - "The physical exercise so not sitting around, I like sports, doing things with my hands, working out plays... the games, not practice, a challenge to run through plays as well as you can as you can see a touchdown." The primary reason is, "I enjoy it, I've played it in the back yard for a long time."

2.   Area Two - Image Incentive and Self Concept in Sport

The questions asked were as follows:

(a) What kind of athletes do you admire, can you name any and describe why you admire them?

(b) How would you like to be seen by others?

(c) How do you think other people see you?

(d) How competent are you compared to others on your team and in your league?

(e) How well do you think you understand the techniques, strategy and tactics involved in your sport?

High Affiliation

Subject A1 (Basketball) - "I have an idol in every sport, Pele (professional soccer) and other New York Cosmos players, Dr. J. in professional basketball and JoJo W. as well as Bjorn B. (tennis) because they are standouts, always go 100%. I'd like to be a standout, different from the rest, I was ball-boy at the Canadian-Cosmos game and was interviewed with Pele, he was quiet and really together, easy going, told it like it was, he was no way an egotist. I saw an interview with Dr. J., he had a sprained ankle at the time, he just inspired people, he tried to encourage people.
I'd like to be seen as just as good as the rest, not fancy or anything, I'd like to be dependable, if there is a two on one, I'd like to be there out of the blue, working hard, 200% every time, not a mouthy

guy....if a guy is in a better position than I am to put the ball up, I'll get it to him.

I think I am seen as a guy who works hard, I've a feeling in my heart they see me that way. They see me a bit below average right now since I've just started, I want to prove them wrong."

With regards to competence, "I think I'm doing all right. I'll have to work at it, there's an awful lot of competition for starting positions on this team, I'm average, not special. I understand the sport 100%, there's always a good reason for the coach's instructions."

Subject A2 (Basketball) - I admire, "Greg K. (a player in Calgary) because he's go good, not a hot dog either, he's my age, he just tries hard. He's calm, controls himself, uses his eyes instead of his mouth. One time he got tripped and kind of got mad but he took it out on the other team, started to steal the ball and everything....I used to be a hot-head, it's just not worth it. I'd like to be seen that way, as a hard worker and as a friendly person, not conceited and I think people see me that way."

With regards to competence, "I feel I'm, you know, pretty tops... this year poor....alot of guys came drunk to practice, our team was not that good. I had a good coach who has been to many basketball camps. I watch different offenses and listen to commentators and color men and have read books on the game so I think I understand it pretty well."

High Principle

Subject PR1 (Swimming) - "I admire Cam H. who I swim with. He's friendly and made the Commonwealth team. He also got a scholarship to Alabama and that's the male college team in the U.S.A. I also admire Graham S. who set a world record, also Mark S. and Greg W. They are dedicated, they come to workouts, one of them set a world record and that's some sort of real success since it takes hard work to be the best in the world....and they're nice guys, not miserable people, don't go around with their nose in the air."

I'd like to be seen "first of all, well, I better try hard, it better look like I'm working, I don't like it when people tell me I slacked off in a race. If somebody whips my tail I don't mind if I did the best of my ability. I like people to think I'm good. When people who know something tell me I did well, that's good enough for me. If I come first that's good, I think of myself as a good sport...shake hands if he whips you or you beat him. I guess they see me that way, that's the way I am. that's the way I'm trying to be."

With regards to competence and understanding, "I guess I'm fair, I'm not really a good swimmer....yet! I got awhile to go....still! Coach tells me I could make nationals, that I could be really good but I don't believe it but that's the most important thing,..... I guess, ya, I'm fair, I know some guys that are good.

I could coach the sport....ya, I understand strategy and stroke technique. If I wasn't going to swim anymore I'd ask for a coaching job of the little kids."

Subject PR2 (Track & Field) - Admire, "I don't follow sports at all, I don't know the names of the teams (he plays guitar, banjo and drums so is busy). Oh, I saw a movie of Bruce J. (Olympic games) in the de-cathalon once and he really impressed me. It was everything he was in,

he did it most perfect....he was just all-round. Also his general atti-
tude, alot of guys get on their high horse and he was just like a nor-
mal person, it didn't go to his head."

As far as liking to be seen, "it really doesn't matter to me, I
never really thought of it, well, see me as me running you know, that
I'm trying hard I guess, put in the best I can, that should be enough.

I guess people see me that way, that I try as hard as I can. I'm
the last runner in the relay races and I like to be a little bit behind
because you can see the others and you push yourself a little bit harder.

I'm pretty competent, we usually win the competitions we're in.
Altogether I don't understand that much about track and field but I do
understand my events...it's my fourth year."

High Self-Task

Subject ST1 (Football) - "I admire Dan K. on our team (Dan K. is
on the professional Edmonton Eskimos), he was my coach at Eskimo camp
and I interviewed Pete L. (also a pro. football player) for a school
project. Dan K. is a very nice guy and he's very good too, throws his
weight around.

I'd like to be seen as a guy who is good, a quiet guy, don't want
to be seen as a guy too good for everyone else...just a stereotyped guy!
You always want to show you are aggressive, you can take on the tackle
(this subject plays middle line-backer). I'd like to be seen as a typ-
ical easy-going guy with the team.

I hear people talking about me....that means something therefore
I must be doing something and since many people know me they realize I'm
on the field there, trying as hard as I can. They like to jostle you
or put you down since they know you are good, they try to upset you be-
cause they don't know you and they don't care for you."

With regards to competence, "I think I'm pretty competent, I started
in grade 10, in grade 11 I was on the senior team, I'd say a little above
average and that's because I think of professional so I work more all
year. I also think I understand the sport pretty well. I watch the
films, I can tell by hand and feet position what play it might be so I
can anticipate."

Subject ST2 (Football) - Admire, "Ken D. of the Montreal Canadiens
(professional hockey), how he prepares and his attitude. He takes it
seriously and does his job, he knows what he's supposed to do, his out-
look. He's a good speaker and seems to know what he's talking about
compared to those who are just hockey players (Ken D. is a lawyer). I
think I work hard but I really don't, it impresses me, those who can
work hard in two things.

I'd like to be seen like Ken D. I like to be seen at games, some
recognition to do other things, not just one area, to have enough abil-
ity so don't have to put it in just one area.

I'm not seen as aggressive, not in bone-jarring tackles but maybe
as a thinking player who can read and anticipate."

With regards to competence, "in high school I'm as good as anyone
in high school, that's for sure. I understand defense more and offense
to a degree."

High Provincial

Subject PV1 (Football) — "I admire Lynn S., George M (both profess-
ional football players). I know George M. personally. I like their
athletic ability and Lynn S.'s attitude to sport. On the field he never
gives up...I never give up, and that's how I'd like to be seen. That's
how I am seen I guess.
  I thought I was pretty competent on our high school team and I also
played for the Huskies (a junior team in the city for up to 21 years of
age). Only one or two of us on the Huskies were competent. I thought
I was not too bad at least. I understand the sport probably 90% and my
position 100%."

Subject PV2 (Soccer) — "I've seen players I admire, their skill,
good athletes like Pele and a few other soccer players in Europe. Also
I admire some professional basketball players, it takes talent to prove
themselves to me, do something exceptional.
  I'd like to be seen as a player who understands the game and knows
the rules. I see myself as running into the goalie when he doesn't
have control of the ball, or just when he's picking it up, my foot goes
for the ball, kicking it out of his hands or so, but others see me as
trying to hurt. I'm very aggressive, know rules, knows what he can get
away with and doesn't, know when to question referee, play honestly,
fans see me as a maniac, try to kill goalie and players on my team see
me as a maniac."
  With regards to competence, "because of my speed and other things
...pretty competent. I rate myself pretty average or above average.
They (the other teams) put extra guys on me, everyone has potential.
I've been captain and assistant for about 7 years but it gets a bit
tiring because pressures are put on you and everyone is questioning you
about what they are supposed to be doing and the coach asks who's best
for a certain position...the captain gets the most pressure.
  I understand the sport very well, you can read what's happening
on offense and defense on both teams. It's not too hard to understand,
there are simple principles."

High Respect-Security

Subject RS1 (Swimming) — "I kind of admire the Montreal Canadiens
(professional hockey) and Yvon C. and Guy L. They seem such heros,
always standing out, so good at what they're doing. They are friendly.
  I'd like to be seen as being fairly competent and good at what I'm
doing, not as some show off. But sometimes people might think I'm a
show off if I try something fancy. The odd time they admire me when I
do good but when I make mistakes they laugh in your face like a tumble
turn once I totally blew, and they laughed...it was really embarassing!"
  Competence, "Um, I feel a little above average but not up at the
top...above the middle. I don't understand the sport as good as the
better swimmers but pretty good. I learned alot this year."

Subject RS2 (Football) — Admire, "not really one that's better than
the other...no, have seen some interviews. Um, probably Mike B. (pro-
fessional Hockey) because he's not really....he's confident, not concei-
ted but states the facts...he's sure of himself, not stumbling along, a
quiet confidence.

I'd like to be seen or recognized as a contributor, as not the best but appreciated for what I'm doing....as one who tries.

I'm maybe about average, maybe a bit higher or maybe a bit lower, I'm not excellent nor that bad. I think I understand the sport pretty well, I know most of the positions."

3. Area Three - Effort and Direction in Sport

The questions asked were as follows:

(a) What are your aspirations in sport?

(b) Do you work out on your own and if so what do you do?

(c) What are your thoughts on competition and on easy and hard practices?

High Affiliation

Subject A1 (Basketball) Note: he is above average in Principle and Provincial.

"I'd like to reach my potential and maintain it, every game must be 100%. I'd like to be in any professional sport, will go to college, no preference and want to play ball.

I work out all the time, sometimes I come to school early and work in the gym, I've been at a summer camp in the States, I have a court in the back yard. Next door there are 3 brothers and we have little games. I have no brothers or sisters.

I like competition more than practice, the crowds, enthusiasm, the adrenalin starts flowing. A hard practice is great but if too easy I'd rather have no practice at all."

Subject A2 (Basketball) - "I may try for university or maybe a senior team. I practice alot, I've got a hoop at home, I run and sometimes work out on the universal to stay in shape.

I like a tough practice but you can't beat a big crowd and a close game...a loud crowd is just great. You hate practice if it is tough, when you are fully tired, but if half tired you can go on."

High Principle

Subject PR1 (Swimming) - Aspirations, "well it used to be to qualify for division two's and now I'd like to take a shot at making nationals. Maybe at university I may not be able to swim but would like to make the national team and take a trip like to the commonwealth games. I'm thinking about lawschool.

I do weight training at home in the summer, I go running sometimes, most of the time I do things with other people because if of equal ability we can push each other.

Work-outs are fun when I'm having a good day but once we weight-trained before we swam and I crapped out since I worked too hard on the weights. I like hard work-outs as long as it's not beyond my ability, as long as it's something I can handle. As far as easy work-outs are

concerned, well, we really don't have any of those.

In competition I like to try and improve my own times. I like competing against other people, to see how you're ranked."

Subject PR2 (Track & Field) - "My aspirations are to become a machinist so I'll probably have to drop sports. I only do track & field plus gymnastics and you can't go very far with it at this school. I'll still jog and I lift weights at home. I run a mile to and from school each day and I go through a weight training program every second night.

I like practice and competition. I play the guitar, banjo and drums so I sometimes have to miss practice because I am involved in these other things. I guess I like hard practices, the others you feel you are wasting your time. I like the excitement of the competition, of seeing how well I can do against the other people."

High Self-Task

Subject ST1 (Football) - "My intensions are to go into university, down south (U.S.A.) or anywhere I can get a scholarship."

With regards to working out on his own, "I'm now playing rugby and I train 5 or 6 times a week at a place downtown. I have no break, I keep training all year, that's the difference between professional and amateur.

I enjoy practice, I like the type of coach who pushes you, who takes it serious. I like a tough practice but easy ones are ok in mid-season. In competition, there's always rivalries, you like to beat the team who beat you, like to defeat friends who are on the other team."

Subject ST2 (Football) - "Maybe I'll play next year, I'm going to a few camps and if I do well maybe I'll play university or on Huskies (junior team for up to 21 years of age).

I jog on my own, lift weights, am on the track team. The only time I'm not involved is right after football. If the coach is ever away from practice I'd take a break.

I don't like practicing, would much rather play...in conditioning practices I love to come off the field. I like the easy practices. I get very nervous before games but once the game is on you forget about it."

High Provincial

Subject PV1 (Football) - With regard to aspirations, "I got a scholarship offer to Drake university for next year, would like to play professional some day. I play water polo and am a swimming instructor also.

I'm not in good shape right now, I have a job although I lift weights at home. Right now I'm training because I've a camp coming up next week.

I love hard practice, I love to sweat although I like an easy practice once in awhile. I like to push myself."

Subject PV2 (Soccer) - "I'll continue to play for as long as I can, until I'm too old or until injuries cripple so I can't play.

I also play in the community league, and in winter I play others sports....summer is all soccer so I'm in training most of the time.

I enjoy competition a whole lot more than practice because you put out a whole lot more. I love a hard practice, I'll congratulate any

coach for making me work harder than I expect to."

High Respect—Security

Subject RS1 (Swimming) — "I'd just like to become better, to get faster. I set goals of certain times...like I don't know after, like olympics, I don't think I'm good enough to do that.

I don't really train much on my own, I get into some community sports I quit hockey, I like to water ski, you get to swim alot there.

I don't enjoy competition that much, I always get too nervous,... if there weren't people watching it'd be better, I'm always worried about making a dumb mistake, it's quite embarassing when something goes wrong and lots of people watching. In practice if you make a mistake nobody really cares except the coach. I like hard practice sometimes, I don't like to slough off but I don't like too hard of practice all the time."

Subject RS2 (Football) — "I'd like to go to university and if I get there to play football or hockey. I do some sprints and jogging in the summer to stay in shape.

I enjoy competition alot more than practice because, I don't know, sort of a goal you can set for yourself...everything comes together and you can measure yourself.

Hard practices are not liked but when you think back you don't mind it that much. Don't like a lot of easy practices because not preparing for the game."

4. Summary of Common Responses of High and Low Principle

Factor Subjects

Because the Principle factor was of greatest interest to the present investigation, 20 subjects from the extremes (10 high and 10 low) were interviewed using the same ten questions used to clarify the five major factor differences. The following information is descriptive raw data obtained from subjects at the extremes of the principle factor. The individual factor scores for the 20 subjects included in this analysis are presented in TABLE 19. TABLE 20 provides a summary which highlights the nature of the responses of the high and low principle factor groups.

TABLE 18. SUMMARY OF KEY RESPONSES FOR THE TOP TWO SUBJECTS FOR EACH OF THE FIVE FACTORS.

Factor	Brief description of responses to questions about (a) values in sport, (b) the primary reason for participation, (c) the kind of athletes admired and (d) how the subject would like to be seen.
Affiliation	(a) exercise, the people I meet, to be with the guys (b) to meet new friends, to achieve and to get along with others (c) stand-outs, different from rest yet humble (d) skilled and dependable, a hard worker and friendly
Principle	(a) to achieve something, organize time better, fitness, try to excell (b) I like to think I'm good at sport, the challenge (c) dedicated people, hard workers, nice guys, humble, work to perfect (d) a hard worker, good sport, put in best effort
Self-Task	(a) the enjoyment of playing, learn something, feels good to win (b) maybe make professional, the competition, the fun (c) nice guys, skilled, throws weight around, versatile (d) skilled, quiet...as stereotyped, aggressive, recognition for several talents
Provincial	(a) the thrill of it, using my body, in front of people, it is physical, skill and endurance, get long with others (b) condition my body & to achieve, the physical, the emotion, stress (c) athletic ability, not quitters, exceptional re. talent (d) not as a quitter, understands the game, aggressive
Respect-Security	(a) the recognition, fitness, compare with others, work with hands, challenge (b) enjoyment and recognition (c) skilled, friendly, confident, sure of themselves (d) fairly competent, not as a show-off, a contributor, not the best

TABLE 19. INDIVIDUAL FACTOR SCORES FOR THE TEN SUBJECTS WHO WERE
HIGHEST AND FOR THE TEN SUBJECTS WHO WERE LOWEST ON THE
PRINCIPLE FACTOR.

Group	Subject /Sport	Affiliation Score	Principle Score	Self-Task Score	Provincial Score	Respect-Security Score
High Principle (n=10)	PR1(sw)	43.2	92.1	50.7	55.7	48.4
	PR2(t&f)	36.1	77.4	40.1	35.2	44.8
	PR3(fb)	41.4	68.3	36.4	46.9	44.6
	PR4(rgby)	67.1*	65.3	49.4	48.7	45.9
	PR5(bb)	54.3	65.1	39.1	42.9	50.1
	PR6(fb)	48.0	64.9	65.7*	45.1	37.7
	PR7(scr)	47.4	63.2	32.6	41.5	69.7*
	PR8(bb)	64.2*	62.5	51.5	38.2	47.3
	PR9(bb)	53.1	61.9	38.3	31.1	53.5
	PR10(wrl)	58.7	61.6	59.8	49.5	50.7
Low Principle (n=10)	PR99(bb)	70.3	37.7	48.3	51.3	38.5
	PR100(hky)	47.1	37.6	44.3	45.9	57.1
	PR101(hky)	51.3	35.7	47.5	49.1	47.0
	PR102(scr)	53.6	35.4	39.2	42.2	50.2
	PR103(fb)	38.4	34.9	59.3	54.8	57.0
	PR104(Scr)	31.2**	34.2	49.4	48.8	48.0
	PR105(wrl)	42.8	34.1	44.5	51.4	49.0
	PR106(fb)	46.7	33.7	62.3	64.8	46.6
	PR107(fb)	54.1	32.6	36.1	26.8**	53.1
	PR108(rgby)	24.7**	27.0	54.5	37.5	39.8

* values higher than the individual's principle factor score for
high Principle group.

** values lower than the individual's Principle factor score for low
principle group.

TABLE 20.   SUMMARY OF COMMON RESPONSES FOR TEN HIGH PRINCIPLE FACTOR
AND TEN LOW PRINCIPLE FACTOR SUBJECTS RANKED IN FREQUENCY
OF OCCURRENCE.*

Area One — Incentive Value in Sport $<$ Values in Participation
Primary Reasons for Participation

High Principle Factor:

(a) fitness and fun, enjoyment (8)

(b) the challenge, feelings of being capable (5)

(c) builds confidence, personal development, learn something (4)

(d) to achieve something, accomplishment (3)

(e) sport requires thinking, transfer to schoolwork (3)

(f) getting involved with people, social aspects (3)

(g) the novelty and being involved in things (2)

- travel opportunities

- compete against yourself, excell against a standard

- leadership opportunities

- working together with others, the team play

- aggression release

- get to represent the school

- the contact

- possible career in sports

- recognition by others

- organize my time better

Low Principle Factor:

(a) exercise, fitness (7)

(b) the company, my friends are involved, being accepted (6)

(c) enjoyment (4)

(d) try to win or be number one, beat somebody (2)

(e) team spirit and cooperation (2)

(f) being able to do something skilled, do something well (2)

- the ruggedness of the sport, the contact

- represent the school

- some medals, recognition and success

- just to try something new, never done it before

- the contact

TABLE 20 **cont.**

Area Two — Image Incentive and ⟨Qualities of Athletes Admired
       Self Concept in Sport ⟨How Subject would like to be seen

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<u>High Principle Factor</u>:

(a) skills perfected, talented (9)

(b) tries hard, doesn't quit (7)

(c) not conceited, quiet (5)

(d) friendly (4)

(e) intelligent, knows what he's doing (3)

(f) sportsmanlike (3)

(g) leader, helps team, unselfish (3)

(h) dedicated (2)

(i) can do other than sports (2)

(j) controls emotions (2)

- all-round ability

- no excuses

- humanitarian, involved in community

- knows what he's doing, variety in moves

- takes responsibility

<u>Low Principle Factor</u>:

(a) talented, skilled (4)

(b) friendly (3)

(c) hard workers (2)

- someone who can move and deek

- try hard, hustle

- not violent

- not conceited

- comes through in the clutch

- good hitters

TABLE 20 cont.

Area Three – Effort and Direction in Sport < Aspirations
                                             Individual Training

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High Principle Factor:

(a) jogging (5)

(b) I play quite a few sports (5)

(c) lift weights at home, or do at school (4)

(d) play jr. football after high school or university (3)

(e) will continue to try to improve my own times (3)

(f) for me the season never ends (3)

(g) individual skill development regularly (3)

(h) go to university (2)

(i) do exercises at home (2)

-   try to make nationals and national team

-   probably drop sports due to time, am so involved in music

-   play for rest of my life

-   pro's if I got asked to try out

Low Principle Factor:

(a) probably quit, just play for school (6)

(b) jog around gym or outside (4)

(c) weight training (3)

(d) play some other sports too (2)

(e) play some golf in summer (2)

-   will play next year and after high school, don't know if
    teams though

-   throw ball with dad

-   do breathing exercises at home

-   will go to technical school

-   do 25-50 pushups and a couple-25 situps & jog around the block

-   do some fitness at YMCA

-   I never work out on my own

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*   The statements included in the table are summarized but remain in
    the words of the individual subjects.

( ) The number in brackets is the frequency of occurrence.

NOTE: Not reflected in this data is the spontaneity of the subject groups
       in which the high principle factor group was generally more open,
       and willing to converse.

D. Psychological – Behavioral Correlates

1. Original Scales and Behavior Scores

To begin with, Pearson product-moment correlations were calculated between the behavioral assessment scores and the twenty scales used in the original factor analysis. An examination of the relationships between assessed behavior and each individual scale may help clarify the components which reflect positive sport behavior (see TABLE 21).

TABLE 21. ORIGINAL SCALE CORRELATIONS WITH THE BEHAVIORAL SCORES EMOTIONAL STABILITY, SELF-DIRECTION, SPORT COMPETENCE AND COMBINED BEHAVIOR SCORE.

Scale	Emot. Stab.	Self-Direct.	Sport Compet.	Combined Behav.
1. Locus of Control	-.063	.001	-.001	-.024
2. Self-esteem	.080	.035	-.039	.032
3. Faith in Others	-.149	-.122	.003	-.110
4. Task-oriented	.045	.111	.096	.101
5. Self-oriented	-.102	-.036	.007	-.052
6. Physical needs	-.044	-.152	-.044	-.100
7. Security needs	-.136	-.094	-.230*	-.176
8. Relationship nds.	-.026	-.059	-.086	-.067
9. Respect needs	-.024	.056	.036	.029
10. Self-actual. nds.	.222*	.199*	.283*	.275*
11. Excellence inc.	.101	.110	-.068	.063
12. Power inc.	-.100	.015	.112	.009
13. Stress Inc.	-.023	-.068	-.131	-.086
14. Independence Inc.	-.027	-.036	-.035	-.039
15. Success Inc.	-.251*	-.097	-.020	-.146
16. Aggression Inc.	-.135	-.064	-.082	-.110
17. Affiliation Inc.	.040	.042	.046	.050
18. Intrinsic Mot.	.062	.195	.082	.140
19. Anxiety	.141	.126	-.069	.085
20. Attibution	.021	.042	.280*	.127

* For 98 degrees of freedom .197 and .257 are needed for significance at the .05 and .01 levels of confidence respectively.

2. Major Factors and Behavior Scores

Pearson product-moment correlations were calculated between each individual's assessed behavior (items), behavior sub-score, combined behavior score and the five factor scores (see TABLE 22). There was a tendency towards a positive relationship between assessed behavior and the principle factor.

3. High and Low Principle Factor Groups

Because identification and understanding of the principle factor was the main thrust of the present investigation, two groups were identified based on principle factor scores. A high principle factor group (n=21) was identified which had a principle mean of 63.8 and standard deviation 7.6, and a low principle factor group (n=21) was identified which had a principle mean of 37.9 and standard deviation of 3.5. Means and standard deviations for high and low principle factor groups for the original scales and behavior scores are presented in TABLE 23 and TABLE 24 respectively. Because the behavioral scores were consistently in the same direction, the high principle factor group means were higher, independent t-tests were run on the four behavior scores. The results of this analysis are as follows:

(a) Emotional Stability, t=1.70; probability = .09

(b) Self-Direction, t = 1.19; probability = .24

(c) Sport Competence, t = 2.44; probability = .01

(d) Combined Behavior score, t = 2.00; probability = .05

Sport competence and positive sport behavior is directly associated with the principle factor.

Within group correlations were then calculated between the five factor scores and the fourteen behavioral items, the three behavioral scale values, and the combined behavior score (see TABLE 25).

TABLE 22. CORRELATIONS OF THE BEHAVIORAL ITEMS (1-16), BEHAVIORAL SUB-SCORES (EMOTIONAL STABILITY, SELF-DIRECTION, SPORT COMPETENCE) AND COMBINED BEHAVIOR SCORE WITH EACH OF THE FACTORS AFFILIATION, PRINCIPLE, SELF-TASK, PROVINCIAL AND RESPECT-SECURITY.

Item	Affiliation	Principle	Self-Task	Provincial	Respect-Security
1. Sport proficiency	-.113	.181	.059	-.059	.048
2. Training effort	-.017	.182	-.008	-.037	.057
3. Sport understanding	.015	.236*	-.015	-.044	.180
4. Competition consistency	.043	.200*	.030	-.071	.199*
5. Self-motivation	.002	.180	.029	-.058	-.036
6. Alertness to tactics	-.016	.188	-.026	-.117	.050
7. Increase effort if failure	.019	.072	-.089	-.205*	.040
8. Not distracted	-.014	.201*	-.077	.014	.144
9. Social adjustment	-.043	.332*	-.131	-.095	.010
10. Emotional control	.096	-.044	.011	-.119	.124
11. Conformability	.060	.109	-.134	-.138	.068
12. Attention span	.023	.094	.024	.031	.121
13. Aggression control	.005	.057	-.078	-.124	.124
14. No interactive problems	.042	.123	-.062	-.037	-.046
Emot. Stab.(items 9,10,11,13,14)	.018	.146	-.099	-.178	.071
Self-direc.(items 2,5,7,8,12)	-.007	.172	-.041	-.077	.075
Sport compet.(items 1,3,4,6)	-.020	.230*	.013	-.083	.135
Combined Behav. Score (1-14)	-.004	.215*	-.051	-.132	.109

* For 98 degrees of freedom .197 and .257 are needed for significance at the .05 and .01 levels of confidence respectively.

TABLE 23. MEANS AND STANDARD DEVIATIONS BASED ON THE ORIGINAL SCALES
FOR TOTAL GROUP AND HIGH AND LOW PRINCIPLE FACTOR GROUPS.

Original Scale	TOTAL GROUP (n = 108)		HIGH PRIN. FAC. (n = 21)		LOW PRIN. FAC. (n = 21)	
	Mean	Stan. Dev.	Mean	Stan. Dev.	Mean	Stan Dev.
1. Locus of control	13.4	3.4	15.6	2.5	10.5	2.2
2. Self-esteem	31.0	3.9	32.6	4.1	27.7	3.4
3. Faith in others	2.3	1.2	2.8	1.6	2.2	1.0
4. Task Orient.	28.7	5.8	29.9	5.0	26.7	5.2
5. Self Orient.	26.3	5.9	26.3	6.2	26.0	5.3
6. Interaction Or.	25.9	5.5	24.3	4.3	28.4	5.6
7. Physical needs	10.7	4.0	9.6	4.1	12.0	2.8
8. Security	12.8	4.4	10.2	3.8	13.9	4.8
9. Relationship nds.	13.2	4.9	12.1	4.4	15.8	3.9
10. Respect needs	9.8	3.6	9.0	3.8	9.5	3.3
11. Independence nds.	14.6	3.8	14.7	3.4	13.9	3.8
12. Self-Actual. nds.	22.9	4.7	28.5	3.4	19.1	3.0
13. Excellence inc.	23.7	2.3	24.9	1.8	23.1	2.9
14. Power incentive	21.1	3.2	20.2	2.0	20.8	2.6
15. Stress incentive	22.0	3.4	23.7	3.5	21.1	2.2
16. Independence inc.	13.2	2.4	12.5	2.5	13.6	2.7
17. Success incent.	26.4	3.5	25.3	3.8	26.2	3.6
18. Aggression inc.	24.6	4.4	21.2	4.2	27.1	3.9
19. Affiliation inc.	27.8	3.2	27.5	4.1	27.8	2.4
20. Intrinsic mot.	7.7	3.0	9.4	3.1	6.6	3.5
21. Anxiety	23.6	4.3	23.2	5.3	23.7	4.6
22. Attribution to achieve	7.5	2.6	8.9	3.3	5.9	2.2

TABLE 24. BEHAVIORAL ASSESSMENT MEANS AND STANDARD DEVIATIONS FOR THE TOTAL, HIGH PRINCIPLE FACTOR, AND LOW PRINCIPLE FACTOR GROUPS.

Score	TOTAL GROUP (n = 100)		HIGH PRINCIPLE FACTOR GROUP (n = 21)		LOW PRINCIPLE FACTOR GROUP (n = 21)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
1. Emotional Stability	14.3	4.1	20.7	3.2	18.9	3.7
2. Self-Direction	19.3	4.9	19.3	5.6	17.3	5.3
3. Sport Competence	14.9	3.9	15.4	3.5	12.7	3.9
4. Total Behavior Score	53.5	10.9	55.5	10.2	48.9	11.5

TABLE 25. CORRELATIONS BETWEEN THE FIVE MAJOR FACTORS AND BEHAVIORAL ASSESSMENTS FOR THE HIGH AND LOW PRINCIPLE FACTOR GROUPS.

Item	Affiliation		Principle		Self-Task		Provincial		Resp.-Secur.	
	HPF	LPF	HPF	LPF	HPF	LPF	HPF	LPF	HPF	LPF
1. Proficiency	-.212	-.195	.129	.230	.072	-.479*	-.191	-.241	.410	.128
2. Effort	.042	.171	.032	.328	-.278	-.414	.344	-.603*	.321	-.071
3. Understanding	.174	-.099	-.136	.234	-.187	-.475*	.177	-.411	.591*	-.026
4. Consistency	-.078	-.103	-.289	.226	.036	-.180	-.007	-.468*	.406	.236
5. Self-governed	.071	.221	-.061	.168	-.137	-.355	.290	-.474*	.354	-.214
6. Alertness	-.161	.209	-.119	.343	-.078	-.492*	-.107	-.559*	.389	-.048
7. No excuses	-.314	.276	-.018	.211	-.161	-.400	-.164	-.670*	.324	-.046
8. Not distracted	-.122	.083	.014	.350	-.238	-.532*	.190	-.346	.550*	.037
9. Social adjustment	.126	.122	-.224	.164	-.247	-.417	-.193	-.288	.289	-.074
10. Good control	.033	.027	-.372	.160	.144	-.138	.032	-.332	.371	.064
11. Conforms well	.025	.394	-.269	.498*	-.357	-.482*	-.130	-.165	.131	-.093
12. Planfulness[a]	-.092	.056	.112	.532*	-.050	-.302	.056	-.213	.340	.218
13. Attention span	-.027	-.017	-.127	.287	-.212	-.203	.130	-.430	.308	.151
14. Aggression Control	.026	.146	-.271	-.167	-.031	-.133	-.066	-.220	.431	-.365
15. Receptive[b]	.324	.243	-.297	.165	.285	-.417	.114	-.341	.221	-.070
16. No problems	-.086	-.035	-.021	.160	-.049	-.369	.090	-.536*	.064	-.142
Emot. Stab. (items 9,10,11,13,14)	.024	.166	-.327	.205	-.115	-.406	-.054	-.405	.367	-.163
Self-direc. (items 2,5,7,8,12)	-.088	.173	-.036	.306	-.232	-.443*	.168	-.576*	.421	-.040
Sport Competence (items 1,3,4,6)	-.082	-.049	-.121	.288	-.056	-.447*	-.037	-.475*	.556*	.081
Combined Sport Behav.(1-11,13,14,16)	-.069	.117	-.163	.305	-.183	-.488*	.064	-.558*	.537*	-.044

* For 19 degrees of freedom .433 and .549 are needed for significance at the .05 & .01 levels of confidence.
a,b-Items not used in calculation of the behavior scores of emotional stab., self-dir., sport competence and combined sport behavior.

The assessed behavior differences of the groups are of particular interest. For the low principle factor (LPF) group, positive behavior decreased as self-task[7] and provincial scores increased. This was not the case for the high principle factor (HPF) group, at least not to the same extent (see Figures 6 and 7).

With regards to respect-security, however, there was a direct correlation between positive behavior and respect needs for the HPF group only (see Figure 8).

Finally and based on the principle factor itself, there was a different relationship between assessed behavior for the two groups. The HPF group scores correlated negatively with positive behavior while the LPF group correlated positively (see Figure 9).

4. The Search for Anxiety

The sport competition anxiety test correlated significantly with the excellence incentive scale ($r=.22$) and then had only slight tendencies to relate positively with self-orientation, respect needs, the success incentive and negatively with task orientation. The latter comparisons were all insignificant at the $\alpha = .05$ level of significance.

Because anxiety was related to the excellence incentive, and because excellence contributed to the Principle factor, an examination was made between anxiety and scales, and anxiety and factors within both the HPF and LPF factor groups. While there were no significant correlations between anxiety and any of the scales or factors for the HPF group, four significant values resulted within the LPF group. In that analysis of twenty-one subjects, anxiety correlated positively with self-esteem ($r=.497$), the affiliation incentive ($r=.587$), the affilia-

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[7] All reference to increases on the self-task factor will be in the self oriented direction.

tion factor (r=.609) and the principle factor (r=.656). Since the .05 and .01 probability levels are .433 and .549, these four values are accepted with considerable confidence.
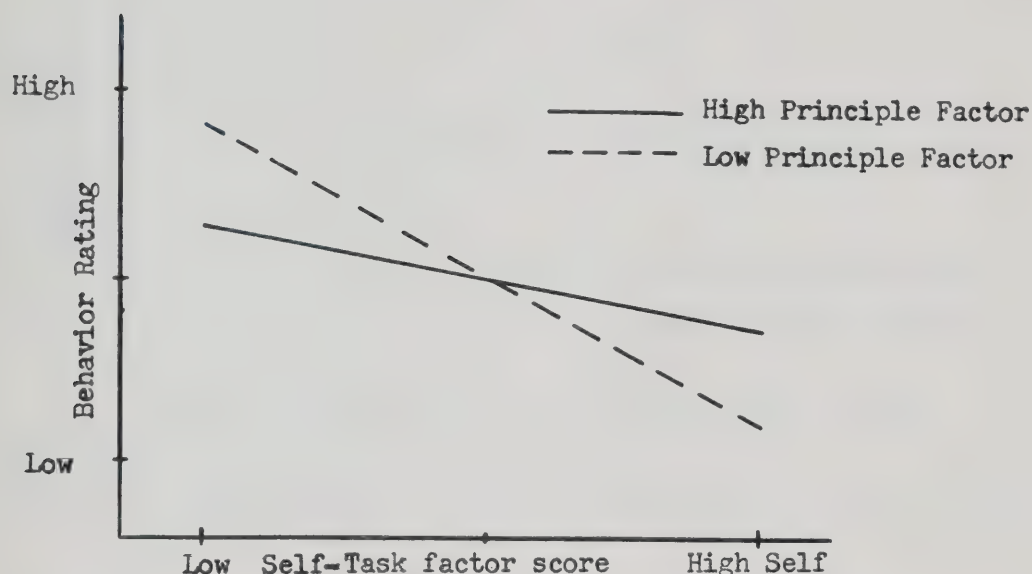
Figure 6.   Relationship of Self-Task factor scores with Assessed
            Sport Behavior for High and Low Principle factor groups.
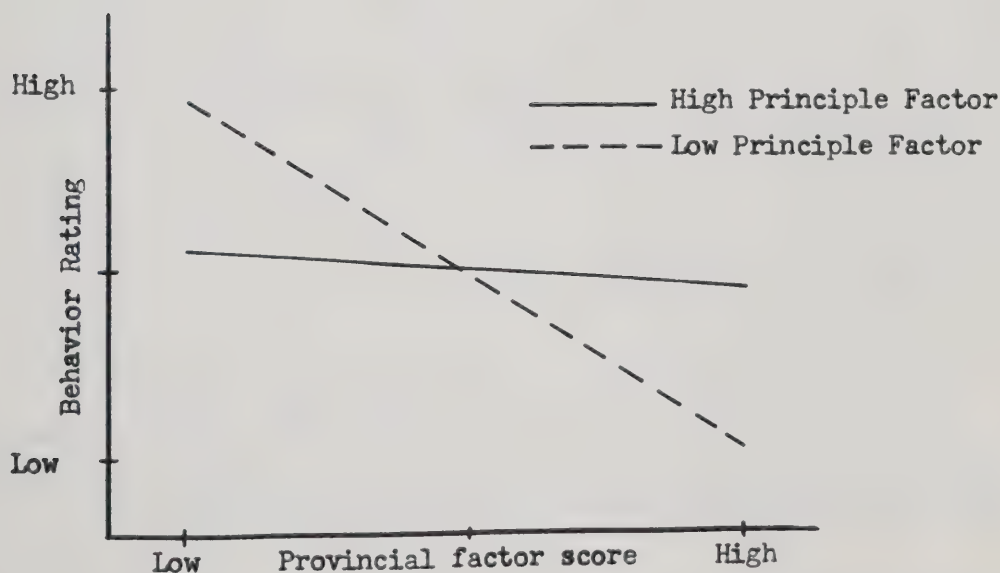
Figure 7.   Relationship of Provincial Factor scores with Assessed
            Sport Behavior for High and Low Principle factor groups.
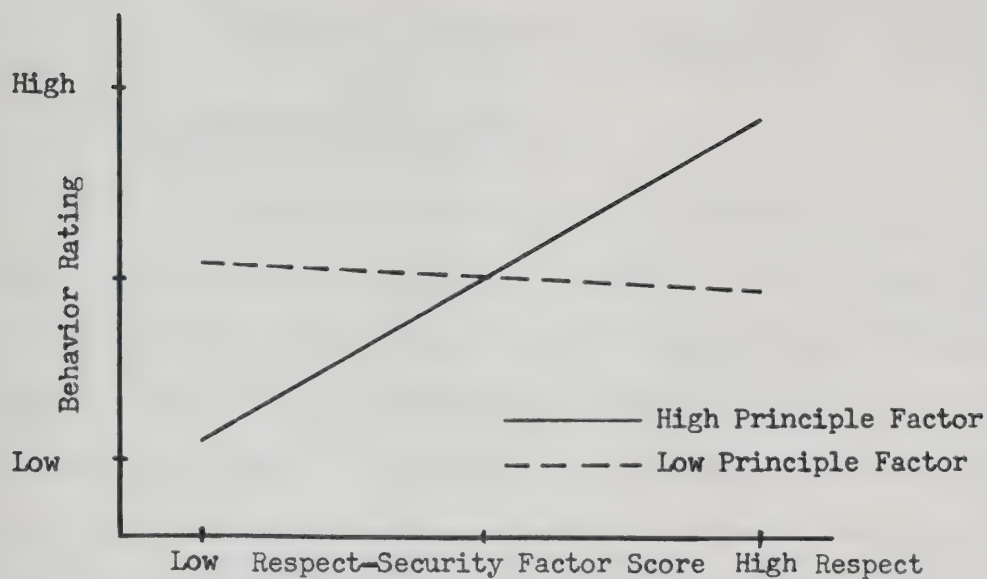
Figure 8. Relationship of Respect-Security factor scores with Assessed Sport Behavior for High and Low Principle factor groups.
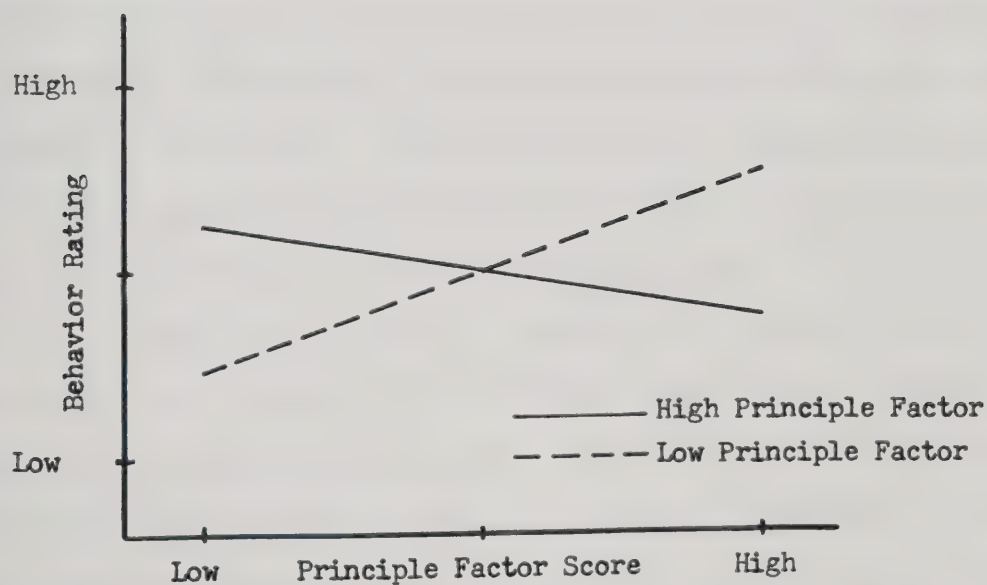
Figure 9. Relationship of Principle factor scores with Assessed Sport Behavior for High and Low Principle factor groups.

CHAPTER VI

DISCUSSION, CONCLUSIONS, IMPLICATIONS

A. The Measurement Instruments

There is value in briefly reviewing the unique scales
used in the present investigation. A total of five assessment instruments
received particular attention in order to clearly identify the constructs
being measured. First, the Rosenberg (1965) Self-Esteem inventory was
examined with regards to the nature of the scoring procedures. The diff-
iculty with the original method, whereby a maximum of six points are a-
lotted the entire ten items was by-passed by instituting a Likert scale
in a fashion that increased the variability of the sample, and decreased
the possibility of misleading results. A factor analysis on the ten
items supported the homogeneity of items and the fact that each item con-
tributed to the major construct described as feelings of capability and
satisfaction with the self, as well as to a second factor described as
feelings of self-worth. The self-esteem scale comprises both factors
with the dominant weighting placed on the belief about the self as being
capable and as having a number of good qualities.

The second instrument to undergo item analysis was the Incen-
tive Motivation inventory (IMI)(Alderman & Wood, 1976). Because of the
lack of data on this inventory with regards to content validity and re-
liability, each of the seven scales was examined separately. An attempt
was made to keep item elimination at a minimum thus preserving the nat-
ure of each scale in relationship to the author's definitions.

Both the correlation analysis and factor analysis on each scale identified a number of questionable items. These items were examined in the light of the mental construct being measured based on the major two factors within each scale.

Because the excellence incentive was of particular interest in the present study, three items were removed since they loaded on a factor more reflective of success than the major component within excellence labelled perfection. Since there is a 'success' scale within the IMI, it was decided to remove the three success items in order to clarify the nature of the excellence score.

The two scales which had two items removed were Stress and Independence. The two stress items which were not used in the final stress score clearly loaded on a boredom-variety factor which is unlike the meaning of stress within that scale. This scale therefore rates the stress incentive as based on the desire for challenges, pressure, and excitement.

The Independence scale had two items removed which failed to contribute to the general nature of the independence incentive. The two factors within the scale have a nature which describes the person who wants to train alone, does not care about teammates and who wants to compete without spectators. The items which were removed did not contribute to the independence construct, a score which may be considered in a negative sense. This scale is one which indicates the absence of an individual's concern for other people although it does include a self-direction element, being able to train on one's own.

Three scales were reduced by one item each. Power loads on dominance incentives and leadership power and is therefore considered a relatively negative construct. Success includes the incentives of

winning and recognition while Affiliation includes belonging and friend-
ship incentives.

Only the Aggression scale remained intact and while there
were questionable items, all loaded to a significant degree on the main
factors within the scale. The aggression score therefore indicates the
strength of forcefulness and dominance incentives and is considered a
negative incentive.

With regards to reliability, two week test-retest coefficients
ranged from .504 to .863. Only independence (r_{xx} = .504) and power
(r_{xx} = .609) were to any degree lower than the remaining five reliabil-
ities. This could be due to the possibility that the subjects may not
have considered these incentives to the same degree that they would have
considered success, affiliation, and excellence and therefore their res-
ponses would be less stable. This may also be due to the fact that the
independence score had the lowest mean, $\bar{X}$ = 13.2 (possible range 8 to 32)
so that slight variations in response from test to re-test would have
a stronger effect on the reliability coefficient.

In summation however, with some confidence it may be stated
that the seven scales of the IMI are reliable, and they measure the
constructs defined by their labells, Excellence, Power, Stress, Indep-
endence, Success, Aggression and Affiliation.

The third scale to be analyzed was the Intrinsic Motivation
assessment which included eight items adapted from the work of Csikszent-
mihalyi (1975). At face value four items appeared to be of an intrinsic
nature. These items were labelled task because they were noted as
focusing attention on the activity itself rather than on factors
surrounding the activity. The results found by both correlation
analysis and factor analysis support this reasoning. While there was

some overlap, as for example, the 'friendship, companionship' reason for participation correlated significantly with the task items 'development of sport skills' and 'enjoyment of the experience through use of skills', the eight reasons were retained and an intrinsic motivation score calculated including all eight items.

As a result, the intrinsic motivation score measured the strength of motivation in sport participation directed at the actual physical activity. A low score on the intrinsic motivation scale indicates that motivations to participate are not directed at the activity itself, that the subject is therefore more extrinsically motivated. The reliability coefficient (r_{xx} = .662) over two weeks suggests that the scores obtained are fairly stable.

Fourth, the attribution to achieve score which was based on Attribution theory (Heider, 1958; Weiner, 1972) requested an estimation of the reason for performance outcome under both success and failure conditions. The possible attributions were effort, ability, luck and task difficulty and the combination of scores for success to effort and ability, plus failure to luck and lack of effort was considered the strength of attribution to achieve. The remaining four attributions, success with task easiness and luck, plus failure with lack of ability and task difficulty was then subtracted to produce a final motive to achieve score. This score reflects the frequency that attributions of success are to the individual himself with failure attributed to unstable factors (luck, effort) which can be changed to meet with success. The reliability coefficient (r_{xx} = .615) is considered adequate.

The fifth and last instrument to undergo item analysis was the behavioral rating form. This seventeen item assessment device was constructed particularly for the present study but was based on the work of

Kenny et al (1968). The items were constructed in a fashion to assess the athlete's behavior in the sport environment as rated by his coach.

Factor analysis indicated that three factors were contained in the behavioral rating form and were subsequently labelled Emotional Stability, Self-direction and Sport Competence. These three scores comprised fourteen of the seventeen items. Of the remaining three items, the first was simply a rating of familiarity with the athlete and the other two loaded equally on all three factors within the form.

Therefore, four scores were calculated for each subject, one each for the three factors within the form, and a total behavior score. The total behavior score was made up of the total of the fourteen items which were included in the three factor scores.

While one can be fairly confident that the three behavioral scores measure the nature reflected by their labells, emotional stability, self-direction, and sport competence, the correlation matrix of the entire seventeen items indicates that positive or negative feelings towards an athlete may supersede individual characteristics. That is, the fact that only five out of 136 correlations were not significant indicates several possibilities. These possibilities are; (a) either the items failed to provide a situation for adequate discrimination of characteristics within an individual, or (b) the coach had either positive or negative feelings about a subject and these feelings were reflected in all behavioral characteristic assessments, (c) these findings could indicate also that the coaches did not know their athletes well enough to differentiate between the items, (d) there is a significant and positive relationship amongst the characteristics measured by the behavioral rating form.

B. Scale Interrelationships

1. Needs, Beliefs, Personal Orientation

Two of the inventories contained ipsative scales. For that reason it was expected to find a number of significant negative correlations within the Orientation Inventory and Self-Actualization Test. Because the latter test was designed for an adult population, attention must be given to its contents.

It was found that there were eight significant correlations out of a possible fifteen comparisons on the Self-Actualization Test (Reddin, 1975). In the test manual the author presents correlations of six needs based on 408 adult subjects. Those values have a similar, however slightly different form compared to the values obtained based on the 108 subjects of the present study (see TABLE 26).

TABLE 26. CORRELATIONS BETWEEN THE SCALES OF THE SELF-ACTUALIZATION TEST FROM BOTH THE PRESENT STUDY AND THE TEST MANUAL.

Source	Needs	Needs					
		P	S	RL	RS	I	SA
The Present Study (n = 108) --- Age: 15-19 yrs.	Physical	.00	-.20	-.22	-.41	-.16	
	Security			-.25	-.51	-.14	-.18
	Relationship				.15	-.38	-.45
	Respect					.05	-.31
	Independence						.01
	Self-Actualiz.						
The Test Manual (n = 408) --- Age: Adult	Physical	.31	-.06	-.20	-.50	-.43	
	Security			-.35	-.32	-.33	-.29
	Relationship				.01	-.37	-.26
	Respect					.16	-.38
	Independence						.07
	Self-Actualiz.						

For 106 degrees of freedom .195 and .230 are needed for significance at the .05 and .01 levels of confidence respectively.

It is suggested that the major source of difference between these two sets of values is contained within physical and security need statements. First, the physical need scale includes several items which refer directly to sport including wishes about playing more sports, getting more exercise and being in better physical condition. These statements along with several others concerning physical health, would have a different value for a youthful subject population and therefore greater weightings would likely be placed on them.

Equally, the security needs scale includes wish statements about insurance policies, and job security. A youthful subject group would likely rate comparative wish statements higher when combined with several of the items on the security scale.

Of interest, however, is the fact that the average values for the 108 subjects on the six scales compared favorably with those presented by Reddin (1975) from 69 personnel-training staff and 148 marketing-sales staff. The only differences of note are lower physical needs for the adult samples and higher self-actualization needs, as well as the tendency for the adult groups to be higher on the higher level needs (see TABLE 27).

There is some support for Maslow's (1954) work on a hierarchy of basic and growth needs. Adjacent needs correlate more strongly than needs which are separated on the scale. Further, the reasoning that is contained in such a hierarchy seems to be satisfying, as for example the significant value ($r = -.51$) between security and respect needs. A logical explanation for this result is that a person who has been satisfied with regards to security needs shifts attention to needs for respect, as well as relationships with others. In reverse fashion, a person who is respected may reflect more needs for security in order to

TABLE 27. MEANS AND STANDARD DEVIATIONS FOR PERSONNEL-TRAINING STAFF,
MARKETING-SALES STAFF AND HIGH SCHOOL SAMPLE ON THE SELF-
ACTUALIZATION TEST.

Needs	Pers.-Training Staff (n=69)		Marketing-Sales Staff (n=148)		High School Sam. (n=108)	
	Mean	Stan. Dev.	Mean	Stan. Dev.	Mean	Stan. Dev.
Physical	6.10	3.62	6.49	4.32	10.64	3.91
Security	9.74	4.94	12.09	4.74	12.79	4.55
Relationship	13.39	5.14	11.71	4.67	13.05	4.85
Respect	10.06	3.97	11.26	4.08	9.81	3.67
Independence	15.74	5.10	15.28	4.34	14.40	3.70
Self-Actualization	29.09	5.59	27.23	5.05	23.17	4.73

maintain that respect. For the purposes of further discussion, the
hierarchy of need scales will be accepted as valid assessments of the
constructs implied.

The scales labelled 'Central Beliefs' indicate a positive re-
lationship, which was expected. However, only one of the three corre-
lations comparing Locus of Control, Self-Esteem and Faith in others
was significant, that being locus of control and faith in others.

To help explain this result, reference is made to a study by
Crowne and Liverant (1963) who used a conformity situation similar to
Asch-type experiments. These investigators assessed confidence state-
ments made during two conformity tasks which involved estimation of the
size of two dots presented tachistoscopically for a one-second interval.

In the first experiment the subjects rated how confident they
felt about their own judgments after hearing a group of supposed peers
state their view about the size of the dot. In the second study the
subjects were asked to bet money based on their decisions which was a
manipulation designed to rate the confidence of their beliefs.

The results indicated were that the external sub-jects were less confident in their judgments when independent of peers. In other words, persons characterized as internals are more trusting of their own judgments than are externals. Similar studies, in support of this finding, are reported by Lefcourt (1976) and Phares (1976).

Of a different nature was an experiment reported by Midlarski (1971) involving altruism. It was found that internals were more likely to help another individual despite possible penalization for doing so. This result suggests that internals think more individually.

Tying these results together with the results of the present study, it can be mildly argued that internal locus of control subjects have more confidence in other people because they have more confidence in themselves. Conversely, external locus of control individuals show less confidence in their own judgments and therefore show less spontaneity in aiding another person if there is possible punishment for doing so. It is not surprising then that externals exhibit less faith in others because they have less faith in themselves.

The correlations between Locus of Control and Self-Esteem (r = .15) plus Self-Esteem and Faith in others (r = .11) were not significant although both were positive. Significant and positive correlations were expected as Fitch (1970) reports a relationship between self-esteem and locus of control while Rosenberg (1965) reports a relationship between self-esteem and faith in others. Perhaps the method of scoring the Rosenberg self-esteem inventory altered the nature of the construct measured.

A more reasonable explanation for this has been provided, in part, by a description of the self-esteem continuum. Buss (1973) depicts the nature of self-esteem along a balanced scale

which can be over-weighted at either end. The balance point, 'confident' centers low self-esteem on one side and high self-esteem on the other in a fashion similar to that depicted by Figure 10.

confident

modest   cocky

humble   vain

self-doubting   boastful

self-effacing   conceited

self-deprecatory   pompous

self-abasing   self-exalting
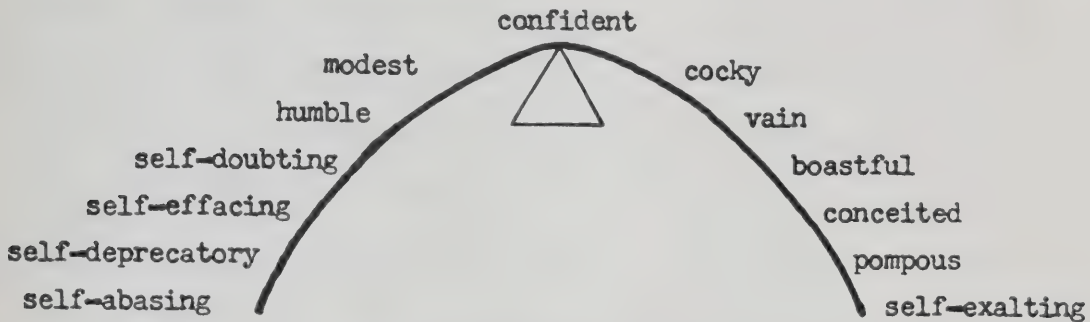
Figure 10.   The Self-Esteem Continuum (adapted from Buss, 1973).

It is clear that too little self-esteem can be inhibiting to the person while too much can be equally problematic. As has been previously mentioned, lack of confidence in one's own judgments has been related to externality and it can be here seen to relate to low self-esteem ....self-doubt. While this suggests a positive relationship between 'externality' and low self-esteem, the other end of the continuum may not show an 'internality' - high self-esteem relationship. Alegre (1974) demonstrated that internal locus of control subjects resist social reinforcement attempts to a much greater degree than external subjects. Certainly it is expected that the self-doubting person would happily accept social praise and in fact with too much may be whipped over to the conceited side of the balance scale.

As for the internal however, this tendency to resist social reinforcement may prevent very high self-esteem. Thus internality need not correlate directly with self-esteem across the entire length of the described continuum.

As far as the lack of a significant relationship between faith in others and self-esteem, which was expected based on Rosenberg's (1965)

work, the scoring change made in the self-esteem ratings may be the prime reason. If that is the case, then it suggests a more elongated continuum of the self-esteem construct and that it has been too narrowly defined. Since a Likert scale was used with Rosenberg's inventory, the high esteem side of the balance may be incomplete. In other words, the old system of scoring may have helped prevent extremely high scores, however if this is in fact the case, more work is needed identifying high self-esteem (confidence) with high self-esteem (exalting).

In fact, similar reasoning may be used in discussing locus of control. On one end of the scale, the external end, the person may feel out of control, with little self-control. Moving to the other end the person, an internal, believes that he is the master of his own fate, that he is in command. However, going beyond this is a return to externality but in a different sense. At this extreme might be the recognition that the universe does continue to evolve, and change cannot be stopped. Release of a self-willed approach to life, not unlike Maslow's (1954) descriptions of highly self-actualized people, implies a fourth dimensional internality. As it stands however, Rotter's (1966) scale deals with internality-externality in the lower case.

It must be noted at this point that self-actualization has been related previously to internal locus of control in a female sample (Warehime & Foulds, 1971). The present results support that finding between internality and self-actualization needs (r = .19) as well as between self-esteem and self-actualization needs (r = .23). It is not surprising, since internality has been associated with task-centered (Lefourt, 1976) that the task orientation scale of the Orientation Inventory (Bass, 1977) correlates positively with self-actualization (r=.25).

It is of considerable support to this discussion to note the

descriptions that Bass gave to the three orientations task, self and interaction. He stated,

> In controlled experiments, self-oriented subjects are actually motivated more highly by extrinsic rewards, inter-action-oriented subjects actually do choose to work in groups, and task-oriented subjects actually do persist longer at ass-ignments without extrinsic rewards...Task-orientation, as measured by the Orientation Inventory, seems to have some re-lationship to confidence, persistence, possibly success in learning. They seem more tolerant to differences of opinion and less likely to conform....The distinction between self and task-orientation seems most profitable in understanding the differential interpersonal responses of subjects to in-trinsic and extrinsic cues, to inner demands and external influences. The self-oriented subject prefers to hear how good he is, the task-oriented subject prefers to do better than before. The self-oriented subject is more likely to misinterpret what is said to him. The task-oriented subject, if he sees he is influential, is more likely to persist despite the errorful leadership he provided, the self-oriented subject is more likely to withdraw if he thinks he contributed to the group's failure."
> And in summary, "The self-oriented subject appears as an easily irritated person striving and competing for extrinsic rewards. Interaction-orientation scores relate strongly to various measures of need for affiliation. The interaction-oriented subject wants to be accepted. Task-orientation relates to measure of persistence, endurance and liberalism (Bass, 1977, pgs. 4,5).

It is not surprising then, to see the emergence of several factors boiling up from basic needs, through central beliefs into per-sonal orientation. Task orientation, within the present study, corre-lated positively with self-actualization needs, negatively with relat-ionship needs and positively, a somewhat unexpected result, with phys-ical needs. Self orientation correlated positively with respect and independence needs while interaction orientation correlated positively with relationship needs and negatively with independence needs and high self-esteem.

Locus of control and faith in others did not correlate with any of the personal orientations although expectations were that locus of control would relate to the orientation scales. Marston (1964) found

a positive relationship between self-orientation and the tendency to describe oneself as likely to be influenced by the external environment. Conversely, task-orientation was connected with a more internal locus of causality.

Moving now into the sport specific scales, there are a high number of correlations which substantiate and expand the relationships already discussed.

2. The Sport Connection

The highest value obtained in the complete correlational analysis occurred between affiliation and independence incentives $(r = -.59)$. This is not surprising since the two scales measure similar constructs but in opposite directions. The affiliation incentive also correlated negatively with independence needs $(r = -.24)$ interaction orientation $(r = .34)$, relationship needs $(r = .34)$ and respect needs $(r = .20)$. Affiliation incentive correlated negatively with self-actualization needs $(r = -.19)$ and task orientation $(r = -.27)$.

To help explain these results, the correlations with the intrinsic motivation scale are reviewed. The intrinsic motivation scale correlated positively with task orientation $(r = .25)$, self-actualization needs $(r = .20)$, the excellence incentive $(r = .25)$ and the independence incentive $(r = .19)$. Correlating negatively with intrinsic motivation were relationship needs $(r = -.21)$, the power incentive $(r = -.20)$ success incentive $(r = -.21)$, aggression incentive $(r = -.20)$ and the affiliation incentive $(r = -.23)$. Thus, the basic relationship needs, interaction orientation and affiliation incentive in sport, is termed extrinsic motivation which is significantly related, in a negative sense, to intrinsic sport motivations geared at excellence or perfection.

Of a different nature are the correlations between the sport power incentive with success (r = .30), and aggression (r = .31), stress (r = .33) and intrinsic motivation (r = -.20). These interrelationships are connected to basic needs, beliefs and orientations as well. Power is negatively related to self-actualization needs (r = -.30) and, while not significantly, to self orientation, relationship needs and respect needs. The success incentive correlates with respect needs (r = .27), self-orientation (r = .32) and task orientation (r = -.20). Aggression correlates negatively with self-actualization needs (r = -.37) and internal locus of control (r = -.21). Finally, all three of these sport incentives, power, success and aggression correlate in a negative direction with intrinsic motivation (r's = -.20, -.21, -.20 respectively). These findings strongly suggest the prevalence of a narrow-minded approach to sport in a sense of placing the self above all else.

It is of interest also to note that the sport independence incentive, previously described as a negative construct, correlated positively with intrinsic motivation (r = .19) and task orientation (r = .22) and this may be attributed to the self-direction component contained within the independence incentive scale. Other relationships with the independence incentive are in a negative direction, with internal locus of control (r = -.20), high faith in others (r = -.26) and interaction orientation (r = -.23).

The remaining two scales not yet discussed are sport competition anxiety and the attribution to achieve scale. Most surprising was the fact that anxiety failed to correlate with any of the scales other than the excellence incentive in sport (r = .22). This finding is in the opposite direction from that reported by Costello (1967) who found a positive relationship between anxiety and success incentives but not between anxiety

and achievement incentives, assumed to be equated with excellence. Also, Taylor (1953) found a positive correlation between manifest anxiety and self-orientation, and a negative relationship with task orientation.

The attribution to achieve scale correlated positively with internal locus of control ($r = .30$), self-actualization needs ($r = .30$) and intrinsic motivation ($r = .21$) and negatively with security needs ($r = -.20$). The first is not a surprising finding since internal locus of control is part of the attribution scale, that of attributing success to the internal factors of ability and effort. However the relationship between attribution to achieve and intrinsic motivation and self-actualization suggests that an important factor runs through these particular scales. Therefore, an examination of the findings of the factor analysis is in order.

C. Factor Analysis

Based on the major correlation matrix of twenty scales (independence needs and interaction orientation were removed because of the ipsative nature of the self-actualization test and the orientation inventory) a five factor solution was produced. The first factor was Affiliation, loading on affiliation incentive in sport, relationship needs, faith in others and negatively with the independence incentive in sport. The label 'Affiliation' was chosen for reasons expressed by the loadings as well as because the top two subjects, who were interviewed based on this factor, rated the major reason for sport participation as friendship and companionship. The interview results clearly support the nature of this desire for Affiliation, to interact with others, to have relationships with others. For the extreme sub-

jects, it may be said that their primary focus of motivation was to affiliate.

This factor may be interpreted in both a positive and negative sense. That is, subjects who are very low on Affiliation may be better able to focus attention on task accomplishment and be less disrupted because they are less aware of personal interaction. On the other hand, subjects who are high on this factor may be considered valuable on a team because they may add to the interactive harmony of the group.

Perhaps it may best be described as a factor at the extremes of which may be a possible retardation effect on performance. Those subjects who are extremely high on the affiliation factor and moderate to low on the others, may place too much emphasis on personal interaction and fail to concentrate on the task at hand, at accomplishment and excellence. At the lower end of the scale, the subject may be so aloof to the group that a negative connotation may be evidenced. The extremely low affiliation subject may not care what others think, and not care about others, therefore reducing his possible contribution to the group.

It must be further pointed out that this Affiliation factor was very strong in the sample of high school athletes used in the present investigation. The reasons for taking part in sport voluntarily reflect the desire or need to work and be with other people. This need must be recognized by the coach since participant unrest and drop-out may occur should this affiliative or interactive need go unsatisfied. Group, or team harmony may very well be a critical issue in sport performance in high school if not at all levels.

The second factor has been labelled 'Principle' and it is the hypothesized factor. The heaviest loadings are self-actualization needs, internal locus of control, and attributions to achieve. Minor contributions come from high self-esteem, excellence incentive, intrinsic motivation and in a negative sense   aggression incentive and relationship needs. The subject who is high on the principle factor reflects autonomy and self-direction. The term principle is adopted because it refers to, 'a fundamental cause which necessarily brings about a certain result.'

Now, let's consider an athlete over several years of sports participation. Advancement or achievement can be connected to this Principle factor since without it, it would seem difficult, if not impossible to progress. Specifically, the athlete must accept the proposition contained within locus of control and attribution theory, that the origin of behavior must be within the self. At the extreme of externalism, there would be seen to be no point in striving for any accomplishment because outcomes are viewed as chance occurrences, based on luck. Quiting would predominate!

Equally, and reciprocally, high self-esteem loads within the Principle factor. It is logical that a person must see himself as competent, of worth, and equal with others in order to strive to accomplish particular goals. Low self-esteem suggests feelings of incompetence and at the extreme would be a condition of hopelessness, why try!

The heaviest loading within the Principle factor was self-actualization needs. Because of the importance of that particular scale, it is of interest to examine the fourteen 'I wish' statements which, if rated heavier, indicates higher self-actualization needs. These fourteen wish statements are:

1. I wish that I could improve my knowledge.

2. I wish that I could realize my full potential.

3. I wish that I could achieve more of my personal goals.

4. I wish that I could develop more than I have.

5. I wish that I could have the freedom to accomplish what I know
    I can.

6. I wish that I had much more skill in several areas.

7. I wish that I could learn more.

8. I wish that I could achieve all of my personal objectives.

9. I wish that I could continually improve myself.

10. I wish that I could spend less time and effort on unimportant
    things.

11. I wish that I could do more worthwhile things.

12. I wish that I could develop myself to the fullest extent.

13. I wish that I could do every job well.

14. I wish that I could take much more pride in the kind of work I do.

Clearly, these statements contain an element of achievement
however there is more! Items (2), (9), (10), (11), and (14) refer to
the type of achievement, that it is of a particular nature. These items
actually reflect a desire to accomplish worthwhile goals and in a sense
this differs from achievement which can refer to achieving a goal which
may not reflect an improvement of a worthwhile end-state. In essence,
the Principle factor represents a crucial element in individual growth
and one which may be very much underplayed by the present sport world
where emphasis is on success, extrinsic rewards and oftentimes dogmatic
physical training.

The third factor has been labelled 'Self-Task' because
of the weightings on self orientation, the success incentive and

respect need plus as an opposed weighting on task orientation and intrinsic motivation. Attention was placed on the 'self' end of this factor. Noted are the results of Cattell, Saunders and Stice (1957) who report self-orientation relationships to Aggressive-competitive, Bohemian-introvertive, Suspicious-jealous, Tense-excitable, lack of control and immature-unstable.

The fourth factor has been called ' Provincial' in the sense of the term referring to 'limited'. The essential loadings of this factor are the incentives of power, aggression, stress, and success and in a negative direction, self-actualization needs. This factor therefore reflects a narrow view of sport participation, the short-range goals which are clearly not related to excellence or development of the person.

The fifth and final factor has been labelled 'Respect-Security' because of the loadings on respect need and in an opposite direction with security need. Low self-esteem and relationship need also contribute to this factor connected to 'Security' and 'Respect' needs respectively. Figure 11 presents these five factors emphasizing their general to specific natures. It must be noted that this figure includes very minor loadings so it must be read with some caution.

These five factors received minor support from the interview data. The two upper-most extreme subjects of Affiliation clearly reflected the desire or need to associate with others. The upper-most extreme subjects on the Principle factor spoke in terms of accomplishment, excellence and trying hard. The two subjects interviewed who were extremely high on the Self-Task factor rated enjoyment and the good feelings of winning as predominant while the two highest on the Provincial factor rated the physical, using the body, the emotion and

Level of Construct	Affiliation	Principle	Self–Task	Provincial	Respect–Security
Sport Specific	+ Affiliation – Independence – Aggression – Intrinsic motivation	+Attribution to achieve + Intrinsic motivation – Aggression + Excellence + Stress	+ Success – Intrinsic motivation – Independence – Stress + Anxiety	+ Aggression + Power + Stress + Success + Excellence	+ Independence + Stress + Power + Affiliation
Personal Orientation	+ Interaction oriented – Task oriented – Self oriented	+ Task oriented	+ Self oriented – Task oriented – Interaction oriented	+ Self oriented	X
Central Beliefs	+ Faith in others + Internal locus of control	+ Internal locus of control + Self-esteem + Faith in others	+ Self-esteem	X	– Self-esteem
Basic and Growth Needs	+ Relationship – Independence	+ Self-actualization – Relationship – Security	+ Respect + Independence	– Self-actualization + Respect	– Security + Respect + Relationships

Note: The sign in front of each scale refers to the direction of its influence to the specific factor.

X   Impossible to put any particular loading.

Figure 11.   Five General to Specific Sport Orientations (refer to TABLE 16, page 155 for weightings).

in front of people as very important. Finally, the extreme subjects on Respect—Security clearly rated recognition by others as important, and they admired people who were confident and sure of themselves.

At this point one may ask whether the incentive motivation scales might have supplied the same information as that obtained from the complete test battery. The answer to this question is an unequivocal no! For example, the upper two subjects on the affiliation factor actually had higher scores on the excellence scale rather than the affiliation scale of the IMI. There were other subjects who were higher on the affiliation incentive. Further, a total of nine out of the ten high Principle factor subjects had their highest IMI scores on excellence while a total of eight out of ten low Principle subjects rated excellence highest. Indeed it seems that the scales within the test battery amplified the particular focus for each individual subject.

D. Psychological — Behavioral Linkage

Of particular interest are the correlations between the psychological and behavioral assessments. It was shown (TABLE 21, page 172) that the individual scales had few relationships to the coaches' behavioral ratings of athlete emotional stability, self—direction and sport competence. Only the self—actualization scale correlated consistently with the behavior scores. Of note however are several other correlations including attribution to achieve with sport competence ($r = .28$), security needs and sport competence ($r = -.23$), and sport success incentive with emotional stability ($r = -.25$). The first provides considerable support for the works of Heider (1958) and Weiner (1972) and their emphasis on the role of effort in achievement related tasks. The mental capacity, if it can be called that, to accept succ-

ess   as a product of one's own ability and effort, while at the same time providing hope for overcoming failure by emphasizing attributions to luck and lack of effort, would seem to be prerequisite qualities for anyone involved in performance based sport. Equally, the nature of self-actualization needs, and perhaps their magnification within sport, may contribute to increases in sport competence.

Also, success incentives, being related to a lack of emotional stability and security needs as related to lack of sport competence are noted. The competitive sporting environment places a premium on emotional control, the lack of which has caused problems and failures on many occasions. The emphasis on winning and recognition is related to this lack of control and yet the success incentive is not related to sport competence.

Security needs, being negatively related to sport competence suggests attention be placed on making athletes feel wanted on the team. This approach may reduce insecurity and allow for greater attention to be placed on achievement. Such an interpretation must be read with care since it is based only on correlational figures.

A clearer picture of this result may be obtained from the correlational analysis of the five major factor scores and the behavioral assessments. The Principle factor correlated positively with several behavior items including sport understanding, competition consistency, lack of distractibility and social adjustment and narrowly missed significance for items sport proficiency, training effort, self-motivation and alertness to tactical changes. Therefore the Principle factor correlated positively with the total positive assessment of behavior ($r = .22$) as well as with sport competence ($r = .23$).

The only significant negative relationship was on the provin-

cial factor with item, 'will increase effort when failure is encountered'. Both the Provincial and Self-centered factors reflected the tendency toward negative sport behavior with high factor scores.

This finding is of considerable significance and can be interpreted in several ways. First, it may be that the more proficient athletes have developed a nature which is reflected by self-actualization needs or the Principle factor components. Because of their relative proficiency in sport, respect and relationship needs may be satisfied which may, in turn, free them for greater concentration on task accomplishment and personal development in an unending circle of progress. Or, it may be that the coach has simply assessed the more competent athletes as higher in the behavioral characteristics confusing them with physical skill development. A third consideration is also important, that the psychological makeup of the high Principle factor subjects results in greater sport competence and generally more positive sport behavior made up of emotional control, self-direction and sport competence.

While the interpretation of these findings cannot be taken into the realm of cause-effect due to the correlational data, the relationships between behavior and mental constructs is most intriguing. The fact that the Principle factor includes locus of control, for example, and the fact that internal locus of control has been positively related to alertness, to greater emotional control, greater acceptance of responsibility and need to achieve (Phares, 1976), is consistent with the positive behavioral correlates of high principle scores. Further, the fact that high school coaches often have too many athletes for too short a period of coaching time, presents a situation where small correlations would have been expected under the best of circumstances.

Because of the importance of the Principle factor, two groups

were identified at the extremes of that continuum. Within group corr-
lations were calculated for High (HPF) and Low (LPF) Principle factor
groups with the behavioral items, sub-scores and total behavior scores.
In support of the essential nature of the Principle factor component,
are the correlations of the LPF group with behavior. Clearly and signi-
ficantly shown was a negative relationship between positively assessed
behavior and scores on both the Self-Task and Pronvincial factors. As
scores increased for the LPF group, the coaches assessment values of
self-direction, sport competence and positive behavior decreased. This
was not to the same extent, the case for the HPF group.

     With regards to Respect-Security, the opposite result occurred.
For the HPF group, as the respect-security score increased in the res-
pect need direction, so did the coaches' assessment of sport competence
and positive behavior.

     As for Affiliation and the Principle factors, only the latter
showed any sub-group tendency in one direction or another. For the HPF
group, as scores on that factor increased, behavioral scores decreased.
The opposite relationship resulted for the LPF group since behavior
scores increased along with Principle factor scores. These results
were illustrated by Figures 6-9 on pages 179 and 180.

     The nature of the first two comparisons are quite similar and
interpretation not a difficult matter. Because lower behavioral ratings
are associated with low Principle factor scores, increases in provincia-
lism and a self-centeredness would be more marked without the strong pre-
sence of Principle to stabilize behavior. These findings are support for
the negative characteristics associated with the Provincial factor as
well as the self-centered direction of the Self-Task factor.

     The second two relationships, those involving Respect-Security
and Principle respectively, are more difficult to explain. For the LPF

group there is no particular relationship with assessed behavior as respect need scores increase. But, for the HPF group, as Respect—Security scores increase so does positive behavior. The obvious interpretation would have the behavior scores for the HPF group based on increasing need of respect and therefore perhaps greater expressed humbleness. The HPF subjects who are seen as more competent, may be seen in a more positive light as they express more modesty and greater effort.

With regards to the Principle factor interrelationships with assessed behavior, it is of   interest to note the interactive re-sults whereby the LPF group behavior was rated as more positive as their Principle scores increased while the opposite occured for the HPF group. Accepting the coaches' ratings as accurate, two interpretations seem possible. First, as Principle scores for the LPF group increased so did positive sport behavior. For the HPF group however, as Principle scores increased, an overbalance or attention on achievement and devel-opment interfere with positive sport behavior as seen by the coach. The second interpretation would include the same reasoning for the LPF group except that as Principle scores increase for the HPF group, so does a misunderstanding of the athlete who by his very nature may appear to be a problem rather than the self—directed individual that he is.

A word about anxiety. At first glance, the anxiety scores seemed to correlate with excellence and yet it did not load to any de-gree with the five factors. For that reason, within group correlations were examined for both the HPF and LPF groups. Within the LPF groups were found four highly significant values, between anxiety and self-esteem, affiliation incentive, Affiliation factor, and the Principle factor.

Reasonable explanations for these relationships have to do

with the nature of low Principle subjects. Since they were, relative
to their peers, low in this desire to achieve worthwhile goals, it may
be that as self-esteem increased, so did awareness of performance and
fear of failure. In other words, there is a 'caring' function such
that the very low self-esteem subjects cared less and therefore feared
less for their image. Such a state would result in low anxiety.

Similar reasoning can be used to explain affiliation incen-
tives since less emphasis on this need relates to less anxiety in a low
achievement oriented group. For these subjects then, anxiety was strong-
ly related to desires for affiliation.

An explanation for the anxiety-Principle relationship is more
difficult. However, there may be a caring function at work here too.
At the lowest extreme of subjects on the Principle factor, there may
be no thoughts of achievement at all and therefore very little anxiety.
As desires for worthwhile accomplishment increase from this extreme, so
does anxiety since a gap may very well exist between desires and obser-
vation of one's own behavior. Here there may be caring but nothing done
about it.

Regardless of the interpretations of the interrelationships
of the five factor scores and assessed behavior, the importance of Prin-
ciple in sport would seem to be crucial. This leads to discussion of
the concept 'Focus of Motivation'.

E. Focus of Motivation

Today there is tremendous emphasis on winning within the
competitive sport environment. This emphasis, which is most predominant
in professional level sports, has permeated olympic and amateur sport
and winning is often viewed as the most important goal of sports pro-

grams at many levels. Because of this state and the subsequent demand for greater understanding of athletes, coaches, and sport environments, increased efforts has been placed on the phenomenon called motivation.

Perhaps the most significant question asked in the present paper has to do with focus of attention, or concentration in sport. Logically, it would seem that if an athlete is able to fully concentrate on the mechanics and tactics of sport interplay, he should be able to advance in skill development more quickly than an athlete who is consistently distracted. That is, a person who is able to focus attention upon the details and general principles of a specific sport should increase in ability and perhaps perceive the sport with greater understanding than a person who has attention placed on much more than the task itself. At the extremes it may be said that the first individual has a focus of motivation to become proficient in sport while the latter has a focus of motivation which is directed at other contingencies besides sport techniques, and therefore advancement might be less pronounced. In fact the second individual would perhaps be more easily diverted from total positive involvement and function at an inferior overall level of understanding.

This reasoning extends into the actual competitive situation. The athlete who is extremely task-centered, because he is able to concentrate his thoughts on technique and understanding the activity, is less likely to be distracted by external factors which surround performance. The condition of the ice surface, mix-ups in travel arrangements, equipment breakdown and outbursts from spectators might all be better fought off in order to concentrate on the contest itself. Equally, extrinsic rewards may also fail to divert the attention of the highly task or excellence - centered sportsman.

The reason why the phrase 'focus of motivation' has been adopted is unitary. In life situations there are always a number of factors which make up the reasons why people behave as they do. Therefore rather than adopt intrinsic-extrinsic terminology for example, focus of motivation provides for a primary motive for behavior supported by one, two or even a conglomeration of other motives. The human being is viewed as a complete entity who's focus on activity, has a particular and individual nature.

Further, there is nothing stable about this focus as it would seem to change with learning. Reddin (1975) adequately pointed out that older subjects (assumed to have learned more about life) report stronger self-actualization needs and lower respect needs. It is assumed here that as one advances through planetary life a considerable amount of learning takes place with subsequent changes in general perception.

This unstable and holistic view of a human has been discussed by Maslow. He writes,

> The general point of view that is being propounded here is holistic rather than atomistic, functional rather than taxonomic, dynamic rather than static, dynamic rather than causal, purposive rather than simple-mechanical. In spite of the fact that these opposing factors are ordinarily looked upon as a series of separable dichotomies they are not so considered by the writer. For him they tend strongly to coalesce into two unitary but contrasting world views (Maslow, 1954, pg. 299).

This echoes the discussion of Chapter I of this thesis where attention was given to the mechanical versus humanistic view of mankind. In that section behaviorism was seen as an outgrowth of a reductionist philosophy while humanism promoted holism. The results of the present investigation can be interpreted as support for the second approach towards a better understanding of the creation termed 'man', since a major positive construct called Principle (made up of internality, self-

actualization needs, excellence incentives...) was significantly related to personal stability, directedness and competence in the sport environment.

While it is premature to say that this factor may be modified, there is evidence to support further study of its nature. Should it be possible to aid in the development of Principle within the individual, there would not be the counter-control danger that there is when more mechanical approaches are used. The obvious reason why this is so is that it would simply be impossible, due to the very nature of this factor. In a synergetic-interactive sort of way, Principle may be developed through understanding and not very likely by any other means. The point here is that athlete development may depend as much on Principle as on muscle fiber and oxygen up-take. For the athlete and coach, communication and thinking are proposed as fundamental prerequisites to sport advancement tied together with what may be called positive regard for others (Rogers, 1961).

Based on the findings of the present study are several motivational factors which are not directed at the activity itself. While self-centeredness which loaded on self-orientation , the success incentive and extrinsic motivation may misleadingly present a picture of an achievement oriented athlete, the focus of motivation here is mainly self-glorification and status seeking which are not the actual requirements of the activity. Here, there is an imbalance as pride and self-will displace energy input to skill development. Here is reflected the self-aggrandizement element which has worked its way into the sports environment.

Supporting the negative nature of this self-centered focus are the results of the low Principle factor group. That group, low on focus

to excellence, was rated more negatively in general sport behavior as self-centered scores increased.

A second factor reflecting a different focus of motivation was labelled Provincial. Here sport motives are narrow, made up of power, stress, success and aggression incentives and negatively with self-actualization needs. Again, the focus is not on the activity itself and as with the Self-Task   factor, the low Principle factor subjects were rated more negatively as Provincial scores increased. There is some indication that both self-centeredness and provincialness are connected to inferior sport performance and generally more negative sport behavior when the Principle component is weak.

The third factor Respect-Security did not load with any of the specific sport motivational scales but described a secure.person with a general focus of need to be respected combined with low self-esteem. For high Principle subjects, coaches gave more positive behavior assessments to more highly respect need subjects.

The fourth factor, and a strong one, was Affiliation which represents a focus of motivation to be on the team, to interact with others and to have friends. This focus of motivation was based on affiliation incentive scores, and by basic relationship needs and faith in others. Relating negatively were sport incentives such as the independence incentive, intrinsic motivation, aggression incentive, as well as the task orientation. With this factor the major focus is not on the activity but on friendships and on belonging to a group. Considered at the extremes, this focus may be considered inhibiting to sport competence development and yet this focus is healthy since the sport environment to the greater extent, requires personal interaction which   disliked (low affiliation incentive) may be a source of distrac-

tion itself.

The prime mover was the factor called Principle. Despite the limitations of the psychological measurement instruments themselves and despite the fact that behavior ratings had to be through the eyes of the coaches, support was derived for the Principle factor.

And yet, balance theories in psychology (dissonance, equity, optimal stimulation, flow) are a reminder that the ideal profile, based on these five factors, should include considerable weightings on several factors. Certainly the Principle factor is key, when it is low, progress is likely to be limited.

F. <u>Conclusions</u>

Based on the findings of the present study the following conclusions can be cautiously drawn;

1. Hypothesis 1 was rejected as sixty significant scale intercorrelations resulted. The majority of the correlations were in the direction of previously reported literature.

2. The main factor hypothesized to load on internal locus of control, high self-esteem, high faith in others, task orientation, high self-actualization needs, excellence incentive, intrinsic motivation and attribution to achieve, appeared in the factor analytic solution. This factor, which also had negative loadings on relationship needs and sport aggression incentive, was labelled Principle.

3. Hypothesis 3 was accepted since the hypothesized factor (Principle) scores related directly to positive sport behavior as well as sport competence as assessed by individual coaches.

4. Hypothesis 4 was rejected as significant relationship were found between the factor scores and assessed behavior, within the

high and low Principle factor groups. Sport competence, self-direction and combined positive sport behavior decreased for the low Principle factor group in a direct relationship to increases on Self-Task and Provincial factors. This was not the case for the high Principle factor group.

Sport competence and combined positive sport behavior related directly to Respect-Security scores in the direction of increased need for respect for the high Principle group. There was no such relationship for the low Principle factor group.

Finally, there was an interactive relationship between assessed emotional stability and combined sport behavior for the two groups. As Principle scores increased for the low Principle factor group, so did positive ratings of their behavior. However, the opposite was true for the high Principle factor group.

G. Implications

The present findings are considered as support for a humanistic approach to sport involvement. Anshel (1978) wrote on this issue and emphasized that while winning is an important goal for sports participants, the role of sport in our society goes much further than this end. Emphasized by a humanistic approach to coaching are aspects of team sport leadership which allow for positive and meaningful experiences for the athletes. Anshel suggests that the coach who is sensitive in his interactions with each athlete will have a positive influence on the individual as well as total performance.

Obviously as reflected by the five factors resulting from the analysis in the present study, individuals are involved in sport for a variety of reasons. While some of these reasons may be more positive

than others, it must be recognized that all youth express certain needs which may possibly be fulfilled through sport involvement. By catering to a variety of needs and with an approach of sincere respect for the athlete, as well as a distain for the self-defeating thoughts of 'can't', sport performance increases should be promoted.

Most emphatically, the coach must be aware of the characters with whom relationships take place. Communication is fundamental to valuable interpersonal knowledge.

The element of fun must also be a part of sport involvement as the athletes interviewed as part of this thesis clearly pointed out that enjoyment was an important reason for their participation. Enjoyment would seem to be available to task-centered individuals who are not fettered by needs to dominate or intimidate, who are not fearful of embarrassment or loss of friends. The freedom to express in the medium of sport is a healthy inclusion into societies approved activities.

While extrinsic rewards continue to be a part of the sports scene, there would seem to be no reason for undue alarm, although there is reason to examine alternative ways to reward performance. As has been pointed out by Deci (1975a) and others, it may be only that the meaning of rewards must be made more clear. Should they carry a meaning of 'competence', then they may be reinforcing and positive. However if they do not carry any particular meaning and participants expect, and collect and self-aggrandize, they must be considered more of a disservice.

The preceeding text hints very strongly that the real value in sport as well as the real opponent, have been somewhat under-played. What is the opponent anyway? Is it the track, the high bar, the opposing team or is it the defending champion? There is reason to believe that

the opponent is none of these, but that the true opponent is the athlete himself. Just perhaps all along we have been fooled into thinking that success will result by defeating someone when in reality, the only success possible is defeating oneself and all those negative thoughts, self-centered thoughts and destructive thoughts. Perhaps the true nature and value which has to be emphasized is the mental development which rides the crest of sport participation, so that we may try as Albert Einstein says, to become rather than people of success, people of value.

It must be clearly emphasized that by diverting attention away from success (winning and recognition) does not mean that this writer is down-playing the goal of trying to win. What is not envisaged is a utopia of fun and play without the demands of discipline. Far from it! What is meant is that by developing a focus of motivation pointed at those components which make up Principle, performances are more likely to increase and with greater satisfaction.

We have obtained through research, the 'over-load' principle, 'theory of specificity', and the 'need for novelty'. We have obtained through behavior modification, practical ideas on how to increase efficiency and, through humanism, ideas on positive regard and concern for others. To these tools which are of value to the coach and physical education instructor can be added this suggestive information on a Principle motivational factor. The latter concept incorporates task-centeredness, acceptance of oneself as capable and in control of performance outcomes as well as the desire to learn more and to achieve more.

Sport may be the outgrowth of play or it may be the outgrowth of self-defense and military training. While there are some writers who would derrogate sport for its competitive nature as well as its

materialistic tendencies, the positive features of the medium far out-weigh the negative. What may be more sharply criticized are the per-sonal and material attitudes which have reared themselves within sport, partially amplified by media focus on success and big contracts. Pres-ently, our society seems to suffer from a twisted and riddled definition of success which carries a scoreboard in one hand and a set of car keys in the other. Today there needs to be more 'well done, we love you'. Today there is a need to place greater emphasis on personal development. The main sport focus, rather than on the serving ourself, would be of more value if directed at bettering oneself and expressing oneself. What better way is there to serve onself?

H. <u>Suggestions for Further Study</u>

There are several suggestions for further research which are a product of the present study. These suggestions carry with them one rider, that the proposed investigations be positively geared in a fash-ion such as to solve the arithmetic problem 5 x 9 = ? rather than to examine all possible incorrect solutions. In other words, rather than identifying, sorting, classifying and magnifying all the variables which may retard performance, it is suggested that attention be placed on those variables which promote a good performance.

The following studies would be of value;

1. An examination of a female sample of athletes using the same test battery and some behavioral assessment.

2. An examination of an older sport sample or a homogeneous sport sample may also provide greater insight into these five major motivational factors.

3. The question of behavioral validity may be answered by data collec-tion on actual observed behavior in practice and competition settings.

4. More work must be done on the identification of the Principle factor components, as to its makeup, is it learned, can it be amplified and if so what are the long-range benefits to the individual and community?

5. Are there any other central beliefs which are linked to self-actualization needs and if so are they related to sport behavioral competence?

6. Observational studies are recommended in which sport training and competition sessions are observed and records kept of dialogue and behaviors which may enhance or impair 'Principle' development.

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APPENDICES

APPENDIX A — HIERARCHY OF NEEDS INVENTORY

The Self-Actualization Test (Reddin, 1975)

Instructions for answering: Read the first set of three statements (A, B,C) and decide to what extent you agree with each. Assign exactly three points among the three statements. The more points you give a statement the more you agree with it.

A. [3] EXAMPLE 1: Suppose you agree with Statement A but not at all
B. [o] with any of the others; then you would distribute your points
C. [o] in this way:

A. [1] EXAMPLE 2: Suppose in another group of statements you agree
B. [2] somewhat with statement B, disagree with Statement C, and
C. [O] don't totally disagree with Statement A; then you would dis-
tribute the three points this way:

Some of the Statements may have more or less importance to you. Be sure to read them all carefully before assigning their importance. Remember that the three values you give must add up to 3. (Presented with scoring key).

1.
A. [ ] I wish that I had more good meals.
B. [ ] I wish that I could buy a bigger insurance policy.
C. [ ] I wish that I had more friends.

2.
A. [ ] I wish I could be more certain of security in my old age.
B. [ ] I wish that I had more people to talk to.
C. [ ] I wish that I could improve my knowledge.

3.
A. [ ] I wish that my job had more prestige.
B. [ ] I wish that I had a business of my own.
C. [ ] I wish that I could realize my full potential.

4.
A. [ ] I wish that my future were more certain.
B. [ ] I wish more people thought highly of me.
C. [ ] I wish that I could achieve more of my personal goals.

5.
A. [ ] I wish that I could get more rest.
B. [ ] I would like to be able to meet more people.
C. [ ] I wish that I were more independent than I am.

6.
A. [ ] I wish that I had better health.
B. [ ] I wish that I were not alone as much as I am.
C. [ ] I wish that I could think more independently.

7.
A. [ ] I wish I knew a safe way out of my present situation.
B. [ ] I wish that I were more respected. (RS)
C. [ ] I wish that I could develop myself more than I have.

8.
A. [ ] I wish that I were in better physical condition.
B. [ ] I wish that I could have more people to guide and direct.
C. [ ] I wish that I could have the freedom to accomplish what I know
I can.

9.
    A. ☐ I wish that I could change my weight.
    B. ☐ I wish that I worked for myself.
    C. ☐ I wish that I had much more skill in several areas.

10.
    A. ☐ I wish I could plan better for a safe future.
    B. ☐ I wish that I could please people.
    C. ☐ I wish that I got more recognition for the good things I do.

11.
    A. ☐ I wish that I had more friends who would listen to me.
    B. ☐ I wish that I questioned more of the things I am told.
    C. ☐ I wish that I could learn more.

12.
    A. ☐ I wish that I had more time to spend relaxing.
    B. ☐ I wish that I could be more certain of comfort in my old age.

    C. ☐ I wish that I took a more prominent part in conversations.

13.
    A. ☐ I wish that I could have more education.
    B. ☐ I wish that I knew more people.
    C. ☐ I wish that I could think more for myself.

14.
    A. ☐ I wish that I could sleep more.
    B. ☐ I wish that I associated with more community leaders.
    C. ☐ I wish that I could have more control over determining what
        I am to do.

15.
    A. ☐ I wish that I knew better ways of gaining attention.
    B. ☐ I wish that I got more interest from others.
    C. ☐ I wish that I could get some good advice about what I should
        do.

16.
    A. ☐ I wish that I could have more self-confidence.
    B. ☐ I wish that I had more close friends.
    C. ☐ I wish that I had more comfortable furniture to use.

17.
    A. ☐ I wish that I could make more important decisions.
    B. ☐ I wish that I had much more money saved.
    C. ☐ I wish that I had a more comfortable place to work.

18.
    A. ☐ I wish that I were more determined.
    B. ☐ I wish that I had more friends among those I work with.
    C. ☐ I wish that I had a bigger pension coming to me.

19.
    A. ☐ I wish that I could achieve all of my personal objectives
    B. ☐ I wish that I did not so readily accept decisions made by
        others.
    C. ☐ I wish that I could avoid hurting the feelings of others.

20.
    A. ☐ I wish that I could make fewer explanations of why I do things.

    B. ☐ I wish that travelling were safer.
    C. ☐ I wish that I could go to a doctor more often.

21.
   A. ☐ I wish that I could continually improve myself.
   B. ☐ I wish other people would do what I ask them.
   C. ☐ I wish that I got more exercise.

22.
   A. ☐ I wish that I could spend less time and effort on unimportant things.
   B. ☐ I wish that people did not disagree with me so much.
   C. ☐ I wish that I knew more people outside of work.

23.
   A. ☐ I wish that I could do more worthwhile things.
   B. ☐ I wish that I had more authority.
   C. ☐ I wish that I were more cautious.

24.
   A. ☐ I wish that I could develop myself to the fullest extent.
   B. ☐ I wish that I could have more influence on others.
   C. ☐ I wish that I played more sports.

25.
   A. ☐ I wish that I could do every job well.
   B. ☐ I wish that I had a more interesting personality.
   C. ☐ I wish that I could do something about my health.

26.
   A. ☐ I wish that I could take much more pride in the kind of work I do.
   B. ☐ I wish that I had a more steady and secure job.
   C. ☐ I wish that I could do something about the physical conditions at work.

27.
   A. ☐ I wish that I were financially independent.
   B. ☐ I wish that I had more pride in myself and in what I do and know.
   C. ☐ I wish that I could talk about more topics of interest to others.

28.
   A. ☐ I wish that I could make more of my own decisions.
   B. ☐ I wish that I were more important.
   C. ☐ I wish I had more guidelines for deciding what to do.

Note: Scoring instructions have been witheld due to copyright
      law. The manual with scoring procedures may be obtained
      from Organizational Tests, Fredericton, New Brunswick.

APPENDIX B — CENTRAL BELIEF SCALES

APPENDIX B.1 — LOCUS OF CONTROL (Rotter, 1966)

This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered a or b. Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief; obviously there are no right or wrong answers.

Your answer, either a or b to each question on this inventory, is to be reported beside the question.

Please answer these items carefully but do not spend too much time on any one item. Be sure to find an answer for every choice. For each numbered question make a tick (✓) on the line beside either the a or b, whichever you choose as the statement most true.

In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you're concerned. Also try to respond to each item independently when making your choice; do not be influenced by your previous choices.

Remember:

Select that alternative which you personally believe to be more true and circle response on answer sheet.

I more strongly believe that:

1. ___–___ a. Children get into trouble because their parents punish them too much.
   ___–___ b. The trouble with most children nowadays is that their parents are too easy with them.

2. ___E___ a. Many of the unhappy things in people's lives are partly due to bad luck.
   ___I___ b. People's misfortunes result from the mistakes they make.

3. ___I___ a. One of the major reasons why we have wars is because people don't take enough interest in politics.
   ___E___ b. There will always be wars, no matter how hard people try to prevent them.

4. ___I___ a. In the long run people get the respect they deserve in this world.
   ___E___ b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

5. ___I___ a. The idea that teachers are unfair to students is nonsense.
   ___E___ b. Most students don't realize the extent to which their grades are influenced by accidental happenings.

6. ___E___ a. Without the right breaks one cannot be an effective leader.
   ___I___ b. Capable people who fail to become leaders have not taken advantage of their opportunities.

7.   __E__ a. No matter how hard you try some people just don't like you.

    __I__ b. People who can't get others to like them don't understand how to get along with others.

8.   __-__ a. Heredity plays the major role in determining one's personality.

    __-__ b. It is one's experiences in life which determine what they're like.

9.   __E__ a. I have often found that what is going to happen will happen.

    __I__ b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

10. __I__ a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.

    __E__ b. Many times exam questions tend to be so unrelated to course work that studying is really useless.

11. __I__ a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.

    __E__ b. Getting a good job depends mainly on being in the right place at the right time.

12. __I__ a. The average citizen can have an influence in government decisions.

    __E__ b. This world is run by the few people in power, and there is not much the little guy can do about it.

13. __I__ a. When I make plans, I am almost certain that I can make them work.

    __E__ b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

14. __-__ a. There are certain people who are just no good.

    __-__ b. There is some good in everybody.

15. __I__ a. In my case getting what I want has little or nothing to do with luck.

    __E__ b. Many times we might just as well decide what to do by flipping a coin.

16. __E__ a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.

    __I__ b. Getting people to do the right thing depends upon ability; luck has little or nothing to do with it.

17. __E__ a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.

    __I__ b. By taking an active part in political and social affairs the people can control world events.

18. __E__ a. Most people can't realize the extent to which their lives are controlled by accidental happenings.

    __I__ b. There really is no such thing as "luck".

19. __-__ a. One should always be willing to admit his mistakes.

    __-__ b. It is usually best to cover up one's mistakes.

20. __E__ a. It is hard to know whether or not a person really likes you.
     __I__ b. How many friends you have depends upon how nice a person you are.

21. __E__ a. In the long run the bad things that happen to us are balanced by the good ones.
     __I__ b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

22. __I__ a. With enough effort we can wipe out political corruption.
     __E__ b. It is difficult for people to have much control over the things politicians do in office.

23. __E__ a. Sometimes I can't understand how teachers arrive at the grades they give.
     __I__ b. There is a direct connection between how hard I study and the grades I get.

24. __-__ a. A good leader expects people to decide for themselves what they should do.
     __-__ b. A good leader makes it clear to everybody what their jobs are.

25. __E__ a. Many times I feel that I have little influence over the things that happen to me.
     __I__ b. It is impossible for me to believe that chance or luck plays an important role in my life.

26. __I__ a. People are lonely because they don't try to be friendly.
     __E__ b. There's not much use in trying too hard to please people, if they like you, they like you.

27. __-__ a. There is too much emphasis on athletics in high school.
     __-__ b. Team sports are an excellent way to build character.

28. __I__ a. What happens to me is my own doing.
     __E__ b. Sometimes I feel that I don't have enough control over the direction my life is taking.

29. __E__ a. Most of the time I can't understand why politicians behave the way they do.
     __I__ b. In the long run the people are responsible for bad government on a national as well as on a local level.

Scoring Note: E = external response

                I = internal response

                - = item not scored

APPENDIX B.2 — SELF-ESTEEM SCALE (Rosenberg, 1965)

Put a tick (✓) in the appropriate box to show how you feel about yourself. It is important that you answer each question as accurately as you can. Do not spend too much time in deciding your estimation. CIRCLE RESPONSE ON ANSWER SHEET.

	(SA) Strongly agree	(A) Agree	(D) Disagree	(SD) Strongly disagree
1. I feel that I'm a person of worth, at least on an equal plane with others				
2. All in all, I am inclined to feel that I'm a failure				
3. I feel that I have a number of good qualities				
4. I am able to do things as well as most other people				
5. I feel I do not have much to be proud of				
6. I take a positive attitude toward myself				
7. On the whole, I am satisfied with myself				
8. I wish I could have more respect for myself				
9. I certainly feel useless at times				
10. At times I think I am no good at all				

Scoring Key: (used in the present study)

Item	SA	A	D	SD
1.	4	3	2	1
2.	1	2	3	4
3.	4	3	2	1
4.	4	3	2	1
5.	1	2	3	4
6.	4	3	2	1
7.	4	3	2	1
8.	1	2	3	4
9.	1	2	3	4
10.	1	2	3	4

APPENDIX B.3 — FAITH IN OTHERS SCALE (Rosenberg, 1965)

Put a tick (✓) to the left of the statement you most agree with for statements 1 and 2, and circle Agree or Disagree for statements 3, 4 and 5. Please answer all 5 statements, there are no right or wrong answers. (Circle response on answer sheet)

1. Some people say that most people can be trusted. Others say you can't be too careful in your dealings with people. How do you feel about it?

   (a) __✓__ Most people can be trusted.

   (b) _____ You can't be too careful.

2. Would you say that most people are more inclined to help others, or more inclined to look out for themselves?

   (a) __✓__ To help others.

   (b) _____ To look out for themselves.

3. If you don't watch yourself, people will take advantage of you.

    Agree (A)   Disagree (D)

4. No one is going to care much what happens to you, when you get right down to it.

    Agree (A)   Disagree (D)

5. Human nature is fundamentally cooperative.

    Agree (A)   Disagree (D)

Scoring Note: Responses marked ✓ and circled are responses for high faith in others.

APPENDIX C — THE ORIENTATION INVENTORY (Bass, 1977)

Directions: This test consists of 27 statements of opinions and attitudes.
for each statement please indicate in the answer blocks which of the three
alternatives, A, B, or C, is most true, or most preferred, or most impor-
tant to you by writing A, B, or C in the MOST column.

Then choose the least true or least preferred of the three alterna-
tives and write its letter in the LEAST column.

For every statement, be sure you mark one alternative in each column.
If A is entered under MOST, then either B or C should be marked under
LEAST, and so on.

Do not debate too long over any one statement; your first reaction
is desired. PUT RESPONSES ON ANSWER SHEET. (Presented with scoring key)

Most   Least

1. One of the greatest satisfactions in life is:

   A Recognition for your efforts.
   B The feeling of a job well done.
   C The fun of being with friends.

2. If I played football, I would like to be:

   A The coach whose planning pays off in victory.
   B The star quarterback.
   C Elected captain of the team,

3. The best instructors are those who:

   A Give you individual help and seem interested in
      you.
   B Make a field of study interesting, so you will
      want to know more about it.
   C Make the class a friendly group where you feel
      free to express an opinion.

4. Students downgrade instructors who:

   A Are sarcastic and seem to take a dislike to
      certain people.
   B Make everyone compete with each other.
   C Simply can't get an idea across and don't seem
      interested in their subject.

5. I like my friends to:

   A Want to help others whenever possible.
   B Be loyal at all times.
   C Be intelligent and interested in a number of
      things.

6. My best friends:

   A Are easy to get along with.
   B Know more than I do.
   C Are loyal to me.

7. I would like to be known as:

   A A successful person.
   B An efficient person.
   C A friendly person.

Most   Least

☐ ☐   8. If I had my choice, I would like to be:

A A research scientist.
B A good salesman.
C A test pilot.

☐ ☐   9. As a youngster I enjoyed:

A Just being with the gang.
B The feeling of accomplishment I had after I did something well.
C Being praised for some achievement.

☐ ☐   10. Schools could do a better job if they:

A Taught children to follow through on a job.
B Encouraged independence and ability in children.

C Put less emphasis on competition and more on getting along with others.

☐ ☐   11. The trouble with organizations like the Army or Navy is:

A The rank system is undemocratic.
B The individual gets lost in the organization.
C You can never get anything done with all the red tape.

☐ ☐   12. If I had more time, I would like to:

A Make more friends.
B Work at my hobby or learning something new and interesting.
C Just take it easy, without any pressure.

☐ ☐   13. I think I do my best when:

A I work with a group of people who are congenial.

B I have a job that is in my line.
C My efforts are rewarded.

☐ ☐   14. I like:

A Being appreciated by others.
B Being satisfied personally with my performance.
C Being with friends with whom I can have a good time.

☐ ☐   15. I would like to see a story about myself in the newspaper:

A Describing a project I had completed.
B Citing the value of my actions.
C Announcing my election to a fraternal organization.

☐ ☐   16. I learn best when my instructor:

A Provides me with individual attention.
B Stimulates me into working harder by arousing my curiosity.
C Makes it easy to discuss matters with him and with others.

Most   Least

17. Nothing is worse than:

   A Having your self-esteem damaged.
   B Failure on an important task.
   C Losing your friends.

18. I like:

   A Personal praise.
   B Cooperative effort.
   C Wisdom.

19. I am considerably disturbed by:

   A Hostile arguments.
   B Rigidity and refusal to see the value of new ways.
   C Persons who degrade themselves.

20. I would like to:

   A Be accepted as a friend by others.
   B Help others complete a mutual task.
   C Be admired by others.

21. I like a leader who:

   A Gets the job done.
   B Makes himself respected by his followers.
   C Makes himself easy to talk to.

22. I would like to:

   A Have a committee meeting to decide what the problem is.
   B Work out by myself the correct solution to the problem.
   C Be valued by my boss.

23. Which type of book would you like to read?

   A A book on getting along with people.
   B An historical romance.
   C A how-to-do-it book.

24. Which would you prefer?

   A Teach pupils how to play the violin.
   B Play violin solos in concerts.
   C Write violin concertos.

25. Which leisure time activity is satisfying to you?

   A Watching westerns on TV.
   B Chatting with acquaintances.
   C Keeping busy with interesting hobbies.

26. Which would you prefer, assuming the same amount of money was involved?

   A Plan a successful contest.
   B Win a contest.
   C Advertise the contest and get others to participate.

Most   Least

☐   ☐

27. Which is important to you?

A To know what you want to do.
B To know how to do what you want.
C To know how to help others to do what they
   want.

Please check to be sure you have placed an A, B, or C in each
of the squares.

       by special permission from,

            The Orientation Inventory

            by Bernard Bass, Ph.D.

            Published by Consulting Psychologists Press Inc.

            Palo Alto, California

APPENDIX D — INCENTIVE MOTIVATION INVENTORY (Alderman & Wood, 1976)

INSTRUCTIONS: This is a questionnaire that is designed to assess what attitudes you have toward competitive sport and how you feel about yourself as a competitive athlete. It is of utmost importance that you answer these questions as truthfully as you can, so that the assessment of your answers can be a valid and reliable one. There are, of course, no right or wrong answers and it is particularly important for you not to try and represent a person other than yourself.

Read one statement at a time. Decide which one of the four available responses to each statement best represents the way you feel. The four available responses are: (A)=always, (O)=often, (S)=seldom, or (N)=never. Then simply write the appropriate capital letter in the space to the left of each statement. your first reaction to each statement is usually the most accurate one. Don't think too long over a statement in order to try and "figure out" how you feel. Just answer quickly, and please be sure to answer all of the questions. Reply with reference to your major sport. PLEASE USE ANSWER SHEET.

A=always   O=often   S=seldom   N=never

_____1. In sport, doing the best I possibly can is more important than anything else.

_____2. It's important to make your teammates agree with you.

_____3. Hard workouts in practices are pleasant for me.

_____4. I would rather go without help when training.

_____5. Public criticism of my performance bothers me.

_____6. In some sports, such as football and hockey, injuring an opponent in order to win is partially approved of. If the opportunity existed in your sport, would you do the same?

_____7. Close friendships with my teammates are necessary for me.

_____8. Working hard to perfect my individual skills is what counts in sport.

_____9. I like telling my teammates what to do.

_____10. High pressure situations in sport are fun.

_____11. I prefer to compete alone, without lots of spectators watching me.

_____12. When I participate in my sport, my objective is to win.

_____13. I like to intimidate my opponents.

_____14. Being accepted by my teammates is more important to me than winning.

_____15. The better I perform, the more I like myself.

_____16. I take a strong stand in arguments with my coach.

_____17. The more complicated a sport is, the more I like it.

_____18. I care if my teammates like me.

_____19. I like to see my name in the sports section of the newspaper.

_____20. When frustrated, I become even more angry.

_____21. I can be friendly with teammates who do things which I consider wrong.

_____22. Performing well is more important than winning.

_____23. I like being chosen to demonstrate in front of the team.

_____24. I enjoy being "uptight" before and during a contest.

_____25. I care if I make friends in my sport.

_____26. I like competing in front of large crowds of people.

_____27. I enjoy the opportunity to humiliate my opponents.

_____28. I enjoy my participation in sport just to be with other people.

_____29. I get very upset with myself when I don't perform as well as I am able to.

_____30. Being a leader on the team is more important than winning.

_____31. I like doing new things in my sport.

_____32. I like to train alone.

_____33. Winning in sport is the most important thing even when I perform badly.

_____34. Punishment of one's opponents is quite natural in sport.

_____35. Taking part in team affairs is important to me.

_____36. Practicing really hard is what makes great athletes.

_____37. I think people notice me when I participate in sport.

_____38. Not knowing whether I'm going to win or lose before competition is attractive to me.

_____39. I dislike being asked for advice by my teammates.

_____40. Competition is more important than practice.

_____41. Releasing my frustrations is more important to me than winning.

_____42. I want to be considered friendly by my teammates and coach.

_____43. I blame myself when I perform badly.

_____44. Coaches give me too much advice.

_____45. I like lots of noise while I'm competing.

_____46. It's fine with me when no one cares how well I perform.

_____47. I dislike losing.

_____48. I feel sorry for my opponents when I beat them.

_____49. A warm, friendly atmosphere on the team is important to me.

_____50. I would rather learn the difficult things in my sport than the easy ones.

_____51. Winning arguments with my teammates is important to me.

_____52. Drills bore me.

_____53. I would rather lose than accept advice from my coach or teammates.

_____54. I participate in sport because my parents want me to.

_____55. One should beat inferior opponents as badly as possible.

_____ 56. I like to train with other people.

_____ 57. I practice new skills until I can do them perfectly.

_____ 58. I believe I am the most important person on the team.

_____ 59. Excitement in a competition is more important than winning.

_____ 60. I like my parents being around when I'm competing.

_____ 61. The result is important in a competition (game).

_____ 62. Competitive sport is a "dog-eat-dog" situation.

_____ 63. I get very upset when my teammates or my coach reject me.

_____ 64. I give 100% no matter who my opponent is.

_____ 65. I like it when my teammates depend on me during a meet (game).

_____ 66. I like variety in practices.

_____ 67. Listening to my coach is a waste of time.

_____ 68. I would like to be a well-known athlete.

_____ 69. Heckling an opponent when you've beaten him is alright.

_____ 70. The only reason I participate in sport is to make friends.

Note: Scoring instructions have been witheld due to copyright
law. The scoring procedures may be obtained from the
Department of Physical Education, University of Alberta.
Dr. R.B. Alderman and N. Wood (authors).

APPENDIX E — INTRINSIC MOTIVATION SCALE

Instructions: The following list includes 8 reasons why many people take part in sport. After careful consideration of each reason, rate it according to how important it is for you. Number 1 is very unimportant while number 5 is very important. Circle the number which is your estimate. For example:

very
unimportant   1   ②   3   4   5 important

Be sure to answer what you actually believe to be true about yourself. Be sure to answer with reference to your major sport. PLACE YOUR ANSWER (THE NUMBER) ON THE ANSWER SHEET.

---

		very unimportant				very important
a.	Friendship, companionship	1	2	3	4	5
b.	Development of sport skills	1	2	3	4	5
c.	Emotional release	1	2	3	4	5
d.	The physical activity itself, the action	1	2	3	4	5
e.	Recognition by friends and others	1	2	3	4	5
f.	Measuring self against others	1	2	3	4	5
g.	Enjoyment of experience through use of skills	1	2	3	4	5
h.	Measuring self against own ideals	1	2	3	4	5

Scoring Note: intrinsic motivation = $(b + d + g + h) - (a + c + e + f)$

APPENDIX F — SPORT COMPETITION ANXIETY TEST (Martens, 1977)

Directions: Below are some statements about how persons feel when they compete in sports and games. Read each statement and decide if you HARDLY-EVER, or SOMETIMES, or OFTEN feel this way when you compete in sports and games. If your choice is HARDLY-EVER, blacken the square labeled A, if your choice is SOMETIMES, blacken the square labeled B, and if your choice is OFTEN, blacken the square labeled C. There are no right or wrong answers. Do not spend too much time on any one statement. Remember to choose the word that describes how you usually feel when competing in sports and games. Answer in reference to your major sport. PUT ANSWER ON ANSWER SHEET.

	(HE) Hardly-Ever	(S) Sometimes	(O) Often
1. Competing against others is socially enjoyable.	A☐	B☐	C☐
2. Before I compete I feel uneasy.	A☐	B☐	C☐
3. Before I compete I worry about not performing well.	A☐	B☐	C☐
4. I am a good sportsman when I compete.	A☐	B☐	C☐
5. When I compete I wory about making mistakes.	A☐	B☐	C☐
6. Before I compete I am calm.	A☐	B☐	C☐
7. Setting a goal is important when competing.	A☐	B☐	C☐
8. Before I compete I get a queasy feeling in my stomach.	A☐	B☐	C☐
9. Just before competing I notice my heart beats faster than usual.	A☐	B☐	C☐
10. I like to compete in games that demand considerable physical energy.	A☐	B☐	C☐
11. Before I compete I feel relaxed.	A☐	B☐	C☐
12. Before I compete I am nervous.	A☐	B☐	C☐
13. Team sports are more exciting than individual sports.	A☐	B☐	C☐
14. I get nervous wanting to start the game, or contest.	A☐	B☐	C☐
15. Before I compete I usually get up tight.	A☐	B☐	C☐

Scoring Note: Items not scored are 1, 4, 7, 10, 13
Items scored 1, 2, 3 are 2, 3, 5, 8, 9, 12, 14, 15
Items scored 3, 2, 1 are 6, 11

APPENDIX G — ATTRIBUTION TO ACHIEVE SCALE

It has been found that following a winning performance, as well as a losing performance, athletes rate 4 reasons as influential in the outcome. Think carefully about your own sport performances and complete parts 1 and 2 by estimating (circle the number) how important these reasons are in your own successes and failures. Number 1 is never while number 5 is always. For example;

Never 1   2   3   ④   5 Always

Be as accurate as you can and answer what you believe to be true most often about yourself. Do not compare parts 1 and 2 as they are usually different although not always.

- -

PART 1. Indicate how often your own failure .... (in your major sport) is due to each of the following factors. PUT YOUR ESTIMATE ON THE ANSWER SHEET.

    (a) My lack of ability   Never 1   2   3   4   5 Always

    (b) Difficulty of the task (strong opposition)   Never 1   2   3   4   5 Always

    (c) My lack of effort   Never 1   2   3   4   5 Always

    (d) Bad luck   Never 1   2   3   4   5 Always

PART 2. Indicate how often your own success .... (in your major sport) is due to each of the following factors. PUT YOUR ESTIMATE ON THE ANSWER SHEET.

    (e) My effort   Never 1   2   3   4   5 Always

    (f) Good luck   Never 1   2   3   4   5 Always

    (g) My ability   Never 1   2   3   4   5 Always

    (h) Ease of the task (easy opposition)   Never 1   2   3   4   5 Always

Scoring Note: Attribution to achieve

$$score = (c + d + e + g) - (a + b + f + h)$$

APPENDIX H — SPORT BEHAVIOR RATING FORM

Place a tick (✓) in the appropriate box for each numbered statement.

1. How well do you know this athlete compared to other athletes you have worked with?

Know a great deal about him	Know more than average about him	Average	Know less than Average about him	Know very little about him

2. How proficient is this athlete in his major sport compared to others you have worked with?

Much below average	Slightly below average	Average	Slightly better than average	Much above average

3. How does this athlete approach training compared to other athletes you have worked with? Does he put in extra effort?

A very hard worker extra effort	Slightly above average	Average	Slightly below average	Very lazy, no extra effort

4. How well does this athlete understand his sport compared to others... (strategy, tactics, training requirements)?

Has only a limited understanding	Slightly below average	Average	Slightly above average	Seems to understand a great deal about the sport.

5. How well does he adapt from practice to competition compared to other athletes you have worked with?

Puts in consistently good performances	Slightly above average	Average	Slightly below average	Has tendency to practice well but performs poorly in competitions

6. How confident are you that this athlete will train in your absence, ie. is he self-governed?

Would seldom if ever train without coach present	Slightly below average	Average	Slightly above average	Highly self-governed, will train on his own

7. How alert is this athlete? How aware is he of changes in tactics by the opposition?

Seems to be unaware most of the time	Slightly below average	Average	Slightly above average	Seems to be most alert

8. When he encounters failure is he more apt to accelerate his training intensity or more apt to make excuses?

Makes few excuses, works harder to meet with success	Slightly above average	Average	Slightly below average	Always has an excuse

9. <u>Distractibility</u> compared to others -- attention is easily drawn away from the "actual components of the sport activity".

Distracted <u>much</u> too easily	Is distracted too often	Average	Distracted on occasion	Seldom distracted, controls attention very well

10. <u>Social Adjustment</u> compared to others, ability to interact with other athletes.

Extremely well adjusted	Slightly above average	Average	Slightly below average	Poor adjustment

11. <u>Emotional excitability and Control</u> compared to others.

Emotionally volatile very poor control	Easily excited, below average control	Average	Better than average control of emotions	Accepts change in excitement without upset

12. <u>Social Conformity</u> compared to others - conforms or reacts according to taught or accepted standards and morals.

Very good	Better than average	Average	Poor	Very Poor

13. <u>Planfulness</u> compared to others - ability to develop and use plans.

Very poor, accomplishes little without supervision	Below average, needs direction	Average	Better than average	Very well organized

14. <u>Attention span</u> compared to others - ability to attend to one task and maintain interest.

Very lengthy attention span	Slightly better than average	Average	Slightly below average	Very poor attention span

15. <u>Aggressiveness</u> compared to others - attempts to dominate others.

Very aggressive, little control	Frequently resorts to aggression	Average, will react if provoked strongly	Does not choose to agress	Very well controlled

16. <u>Receptivity to incoming information</u> compared to others - attentiveness to suggestions about sports training and feedback which may be of a critical nature.

Rejects information, seems to resist	Slightly below average	Average	Slightly above average	Very receptive and positive

17. <u>Problems</u> - Does this athlete ever have difficulties with others in the sport situation such as teammates, coaches, officials?...compare him to others you have coached.

Never seems to be a problem, tries to keep the harmony	Below average, has infrequent arguments	Average	Above average, has frequent arguments	Is often involved in problem situations

COMMENT: Please make one statement about the general sport behavior of this athlete as per above, or perhaps some comment of importance not covered by the 17 points.

<u>Scoring Note</u>: Items scored ⌈1, 2, 3, 4, 5⌉ are; 2, 4, 6, 7, 9, 11, 13, 15, 16
Items scored ⌈5, 4, 3, 2, 1⌉ are; 1, 3, 5, 8, 10, 12, 14, 17

APPENDIX I - SUBJECT ANSWER SHEET

APPENDIX I - SUBJECT ANSWER SHEET

ORIENTATION INVENTORY ANSWER SHEET

PLEASE PRINT   NAME _____
SCHOOL _____
MAJOR SPORT _____
AGE _____
WANT RESULTS (circle) Yes, No

PART X (BELIEF ORIEN.)		PART Y (GEN. ORIEN.)		PART Z (SPORT ORIEN.)	

PART X (BELIEF ORIEN.)

Quest. 1 (circle a or b)

1. a , b
2. a , b
3. a , b
4. a , b
5. a , b
6. a , b
7. a , b
8. a , b
9. a , b
10. a , b
11. a , b
12. a , b
13. a , b
14. a , b
15. a , b
16. a , b
17. a , b
18. a , b
19. a , b
20. a , b
21. a , b
22. a , b
23. a , b
24. a , b
25. a , b
26. a , b
27. a , b
28. a , b
29. a , b

Quest. 2 (circle)
SA=Strongly agree
A=Agree
D=Disagree
SD=Strongly disagree

1. SA,A,D,SD
2. SA,A,D,SD
3. SA,A,D,SD
4. SA,A,D,SD
5. SA,A,D,SD
6. SA,A,D,SD
7. SA,A,D,SD
8. SA,A,D,SD
9. SA,A,D,SD
10. SA,A,D,SD

Quest. 3 (circle response)

1. a , b
2. a , b
3. a , b
4. a , b
5. a , b

PART Y (GEN. ORIEN.)

Quest. 4 (A,B,or C)
Most Least

1. ___ ___
2. ___ ___
3. ___ ___
4. ___ ___
5. ___ ___
6. ___ ___
7. ___ ___
8. ___ ___
9. ___ ___
10. ___ ___
11. ___ ___
12. ___ ___
13. ___ ___
14. ___ ___
15. ___ ___
16. ___ ___
17. ___ ___
18. ___ ___
19. ___ ___
20. ___ ___
21. ___ ___
22. ___ ___
23. ___ ___
24. ___ ___
25. ___ ___
26. ___ ___
27. ___ ___

for office use

T	S	I

Quest. 5 (rows tot. 3)

	A	B	C
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			
25.			
26.			
27.			
28.			

office use

P	S	RL
RS	I	SA

PART Z (SPORT ORIEN.)

Quest. 6
A = Always
O = Often
S = Seldom
N = Never

1__ 2__ 3__ 4__ 5__ 6__ 7__
8__ 9__ 10__ 11__ 12__ 13__ 14__
15__ 16__ 17__ 18__ 19__ 20__ 21__
22__ 23__ 24__ 25__ 26__ 27__ 28__
29__ 30__ 31__ 32__ 33__ 34__ 35__
36__ 37__ 38__ 39__ 40__ 41__ 42__
43__ 44__ 45__ 46__ 47__ 48__ 49__
50__ 51__ 52__ 53__ 54__ 55__ 56__
57__ 58__ 59__ 60__ 61__ 62__ 63__
64__ 65__ 66__ 67__ 68__ 69__ 70__

for office use only

Quest. 7 (estimates)
a.____
b.____
c.____
d.____
e.____
f.____ office
g.____ use
h.____

Quest. 9 (estimates)
1.(a)____
  (b)____
  (c)____
  (d)____
2.(e)____
  (f)____
  (g)____
  (h)____

Quest. 8 (circle your response)

1. HE S O
2. HE S O
3. HE S O
4. HE S O
5. HE S O
6. HE S O
7. HE S O
8. HE S O
9. HE S O
10. HE S O
11. HE S O
12. HE S O
13. HE S O
14. HE S O
15. HE S O

for office use

APPENDIX J — ATHLETE FEEDBACK FORM

GENERAL AND SPORT ORIENTATION

The following results are raw score values   TO: NAME _____
obtained on 9 questionnaires which include 22
scales. These scores which are scaled relative   SPORT _____
to 108 Edmonton highschool athletes, reflect   SCHOOL _____
your general beliefs, orientation and needs, as
well as sport incentives, attributions and competition anxiety at the
time of test taking. You should note that these "constructs" are certainly
not stable and can be compared to a photograph which can only capture a
scene on one frame or exposure. In other words, if you were to complete
the inventory again, your profile would be slightly different, although
not markedly different. Over several years, major changes will occur.

```
GENERAL ORIENTATION          - LEGEND -          SPORT ORIENTATION

LC = internal locus of control      Exl. = excellence ┐
SE = high self esteem               Pwr. = power
FIO = high faith in others          Str. = stress
T,S,I = task, self, interaction     Ind. = independence ├ INCENTIVES
          oriented                  Scs. = success
P = physical         ┐              Agg. = aggression
S = security         │              Aff. = affiliation ┘
RL = relationship    │              IM = intrinsic motivation
RS = respect         ├ NEEDS        ATT = attributions to achieve
 I = independence    │              ANX = sport competition anxiety
SA = self-actualization ┘
```

Average
score (of
100 Edmon.
HS ath-
letes)

LC SE FIO T S I P S RL RS I SA

Average
score (of
100 HS
athletes)

Exl Pwr Str Ind Scs Agg Aff IM ATT ANX

APPENDIX K — Teacher's Report

The following resume is a brief summary of the recently completed motivational study conducted using a sample of male high school sports participants in Edmonton, Alberta. The total sample (n=108), representing four different schools, ranged from 15 to 19 years of age and all were involved in varsity level sport participation. Thanks is extended to the school board, to the athlete-subjects who were a most cooperative group, and to the teachers whose input assured easeful data collection.

- -

Focus of Motivation in Sport: A Principle Factor

Articles and books on the topic of human, as well as non-human motivation continue to be published and at a rate which is beyond the reading capacity of most instructors of sport. In fact, the practitioner, the teacher in the practical setting, is often divorced from most empirical research and it would take a total committment to study motivation theory let alone research on sport leadership, aggression, human motor performance, physiology, pedagogy, mechanics and more. To stay abreast with all these areas would be most difficult and it would require removing the coach from the job at hand, teaching, dealing with people!

Because of this situation, the described study was conducted 'with' coaches and athletes in a practical sport situation. There is less chance, under these conditions, that the reader will be left with an empty feeling as can be produced by reports of highly controlled laboratory studies.

Motivation has been studied within many uniforms. There are theories on 'instincts', there are 'drive' theories and more recently theories of 'achievement' motivation and 'incentive' motivation. Further, within the last few years, the terms intrinsic and extrinsic motivation have been coined partially due to inaugural work done with rhesus monkeys by H.F. Harlow in 1950, and then emphasized by the writings of J.McV. Hunt and E. Deci culminating in separate books both entitled <u>Intrinsic Motivation</u> published in 1971 and 1975 respectively.

This semantic advancement has arrived on the psychological scene partially due to the growth of behavior modification programs. Promoted

by the writings of J.B. Watson (1925) and B.F. Skinner (1943; 1971), operant conditioning techniques are used to alter behavior through the use of contingency manipulation programs which make use of social, tangible and edible rewards. While such programs of behavior change have been observed as successful, there is reason to believe that there are other effects which have been overlooked.

Research in cognitive social psychology on the effects of extrinsic rewards, has resulted in a great number of publications which report decreases in intrinsic interest when extrinsic rewards are used. That is, people are most often involved in activity for no apparent extrinsic rewards. When edible, tangible and other like rewards are provided to continue participation in that activity, there has been shown to be a decrease in so-called intrinsic interest.

Various theories have been advanced to explain this decreased-interest effect such as the 'Cognitive Evaluation Theory', 'The Overjustification Hypothesis', the 'Distraction Hypothesis', the 'Competing Response Hypothesis' and more. Essentially, what has been shown is that when a person is engaged in an activity assumed to be intrinsically interesting, the adding of rewards somehow takes away from that interest or shifts the locus of cause, the reason for participation, to the external contingency.

The success of behavior modification programs may be explained in reverse fashion. Usually implemented to alter deviant behavior, the use of contingency manipulation techniques serves to change the focus of attention to extrinsic rewards and this spurs more socially desirable behavior. However the obvious shortcoming of this procedure is that it may create a counter-control effect within the individual who is possibly to become extrinsic reward dependent, who will not 'do' unless there is something in it for him.

Therefore, we have two particularly different approaches to dealing with people which are reflected by the humanistic and behavioristic approaches. The discussions between those of each faith clearly highlight different assumptions as to the nature of a human being.

So, what is the answer, what is the coach and sport administration to do about these findings? How do they relate to practical activities (many have been lab experiments with children) and what about human needs?

The present study attempted to bring some of the theory of motivation into the sports arena. Designed was an experiment which assessed athletes on several psychological constructs which varied from basic needs to specific sport orientations. Tied to these psychological measures were interviews and a behavioral measure of each athlete made through the eyes of his coach. Figure 1 presents the various measures in order of specificity.

Level 5 – Coaches Behavioral Assessment

Level 4 – Sport: Incentive motivation, Intrinsic motivation, Attributions to achieve and competition Anxiety

Level 3 – Personal Orientation (task; self; interaction)

Level 2 – Central Beliefs (locus of control; self-esteem; faith in others)

Level 1 – Hierarchy of needs (physical to self-actualization)

Figure 1. Levels of psychological measurement from basic needs to assessed behavior.

Not hypothesized, for convenience, but implied based on a review of related literature, was a major factor which would load on self-actualization needs, internal locus of control, high self-esteem, faith in others, task orientation, sport excellence incentive, intrinsic motivation and attributions to achieve. An hypothesis was generated which stated that this major factor would relate directly to positive sport behavior made up of an emotional stability score, a self-direction score and a sport competence score.

It was found from both correlation and factor analyses, that this major factor did exist as described, and further, that it did relate to positive sport behavior. In addition, there were found to be five major factors for high school sport participation as a result of the factor analytic solution. These factors are described in figure 2.

Interviews, which were conducted, were with the two uppermost subjects on each factor plus the upper and lower ten subjects on the principle factor. As a result of these interviews as well as the statistical analysis, it became very clear that the factors represented the following foci of motivation;

(a) Affiliation – the desire to be with friends, to be a part of the team (focus on relationships).

(b) Principle – the desire to achieve some worthwhile goal, to

learn and improve oneself (focus on the task).

(c) <u>Self-centered</u> – the focus on self and success.

(d) <u>Provincial</u> – dominance, power and aggression incentives are reflected which is a narrow and limited focus.

(e) <u>Diffidence</u> – the desire to be respected by others, to raise one's own self-esteem level, a need for recognition.

Factor 1 Affiliation	Factor 2 Principle	Factor 3 Self-Centered	Factor 4 Provincial	Factor 5 Diffidence
+Affiliation incentive −Independence incentive +Interaction orientation +Relationship needs −Independence needs +Faith in others ——— −Task orientation −Aggression incentive −Intrinsic motivation +Internal locus of control	+Self-actualization needs +Attributions to achieve +Internal locus of control −Aggression incentive +Self-esteem +Excellence incentive +Intrinsic motivation −Relationship needs ——— −Security needs +Stress incentive	+Self oriented −Task oriented −Interaction oriented +Success incentive ——— −Intrinsic motivation −Physical needs +Respect needs	+Power incentive +Aggression incentive +Stress incentive +Success incentive −Self-actualization needs ——— +Respect needs +Excellence incentive	+Respect needs −Security needs −Self-esteem +Relationship needs ——— −Physical needs +Independence incentive

Figure 2. Factors and contributed loadings (positive or negative) ranked in order of influence. The more primary loadings are above the line within each factor.

It must be clear that the phrase 'Focus of Motivation' was chosen due to the holistic and dynamic approach which was taken. People are obviously moved to action by a number of more or less important incentives. The present paper suggests however, that there is a primary focus for each person within the sport setting which may be reflected by one of the presently described five factors or by two of them, or by the strengths of all five. Also, these foci seem to change with life experience as do basic needs (Reddin, 1975).

As previously mentioned, the psychological and behavioral measures were correlated. A direct relationship was found between the Principle factor and positive sport behavior. In other words, those subjects

with higher Principle scores were seen as more competent, self-directed and emotionally stable.

Providing further support to the nature of this factor was an analysis which involved high (n=21) and low (n=21) Principle factor groups. For subjects who were low on this factor, the low Principle factor (LPF) group, as their self-centered and provincial scores increased, so did more negative ratings of their behavior. This was not the case for the high Principle factor (HPF) group. There seemed to be an insulation effect for the HPF group who being high in Principle were more capable of handling the addition of the ingredients implied by self-centeredness and provinciality.

Of interst also was the opposite effect with regards to Diffidence. For the LPF group, as Diffidence increased, behavior ratings decreased relative to the HPF group which showed increases in positive behavior as Diffidence increased. This is not easy to explain, however there are at least two possibilities. First, such extreme Principle scores may indicate that focus is so heavily on achievement that more negative behavior results. Or, it may be that these extremely high Principle subjects are less understood by their coaches who may misinterpret their focus on excellence.

Irregardless, this analysis has pointed out several very important points, most of which may be likened to common-sense or "the knack of seeing things as they are, and doing things as they ought to be done" (Josh Billings). These points, which must be read with caution since based on correlational analysis only, are as follows;

1. High school students are involved in sport for a wide variety of reasons amongst which is achievement.

2. Affiliation reasons for sport involvement are most important and should they be satisfied, greater attention may be placed on excellence.

3. The development of the Principle component made up of the desire to better oneself, to test oneself against an ideal and to take an internal stance that accomplishments can only come about through personal effort, may be crucial to achievement tendencies.

4. Self-centeredness and provincialness in sport may be the personal and materialistic elements which take away from task concentration, and especially so when the 'Principle' ingredients are lacking.

5. It is essential that coaches become as familiar as possible with each athlete. Recommended is individual coach-athlete respect, or in Rogers' (1961) terms, positive regard, and a genuine concern for the individual beyond sport success itself.

6. The increased desire for psychological programs with athletes may be somewhat misdirected. While psychological analysis may be of assistance, more important is close athlete-coach communication, and a focus of motivation towards sport technology and smooth personal interaction, while at the same time away from overattention on success and other non-technological components.

The complete thesis on which this brief summary is based is available from the University of Alberta.